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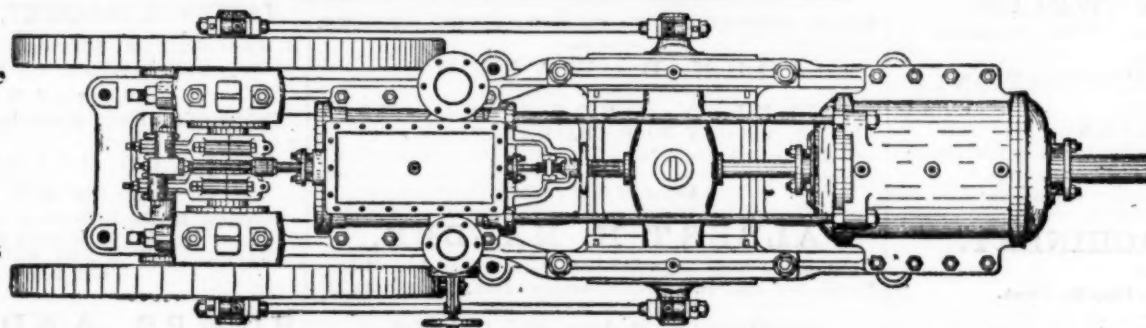
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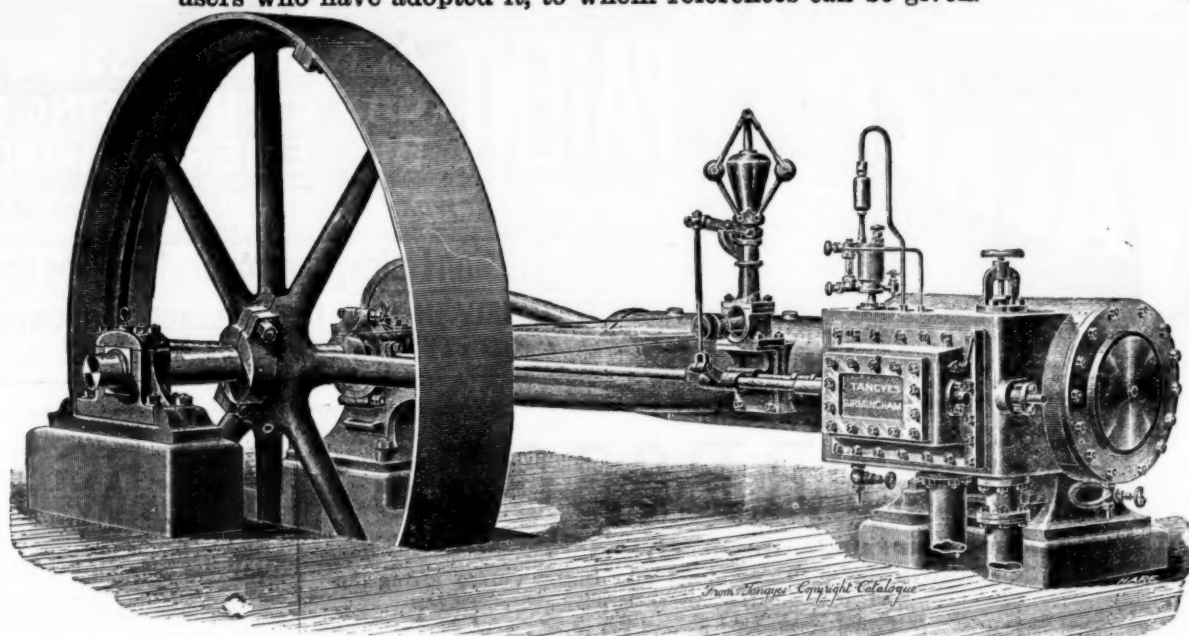
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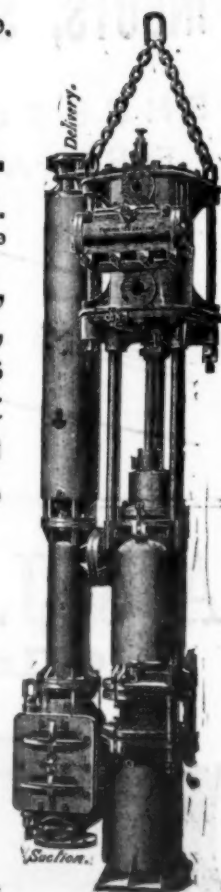
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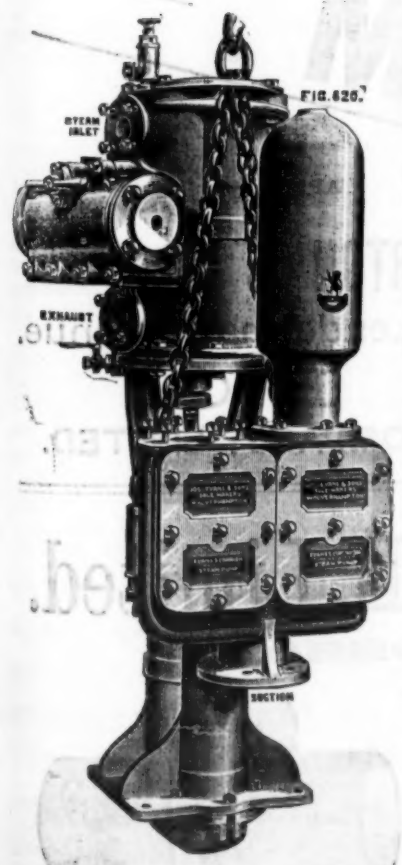


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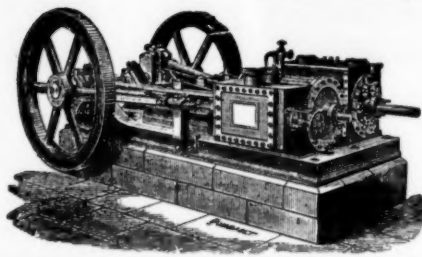
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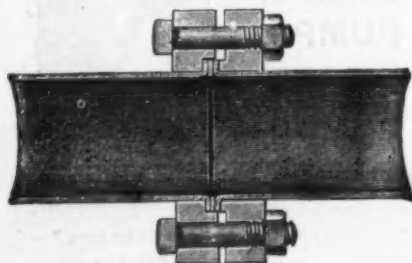
A. & J. STEWART and CLYDESDALE, Limited. Glasgow, Coatbridge, and Mossend.

WROUGHT IRON WELDED TUBES and FITTINGS for GAS, WATER, and STEAM.
 Light Lap-welded Wrought-iron and Steel Tubes
 (SPECIALLY ADAPTED FOR MINES).

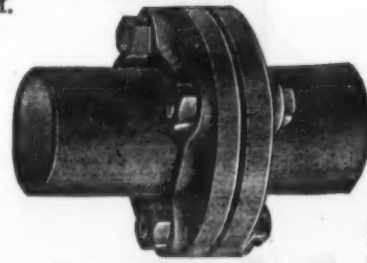
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LAP-WELDED IRON AND STEEL BOILER TUBES
 FOR LOCOMOTIVE, MARINE, AND OTHER MULTITUBULAR BOILERS.

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SECTION OF PATENT FLANGED JOINT



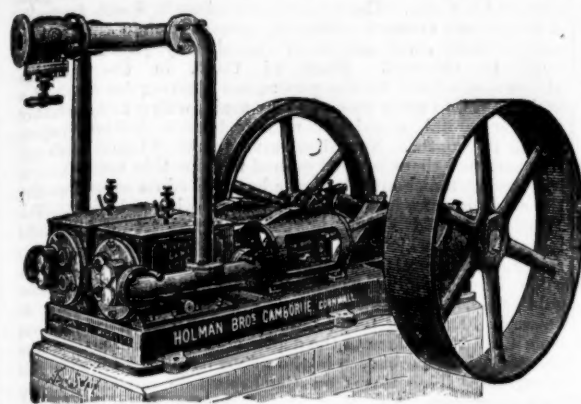
PLAN OF PATENT FLANGED JOINT.

Head Offices: 41, OSWALD STREET, GLASGOW.

HOLMAN Bros., Camborne, Cornwall.

ESTABLISHED 1839.

Patentees and Sole Makers of
"THE CORNISH" ROCK DRILL and "THE CORNISH" COMPRESSOR.



FIRST
SILVER MEDAL,
Highest Award,
Mining Institute
Contest, 1881.



FIRST
SILVER MEDAL
Highest Award,
Royal Cornwall
Polytechnic
Jubilee Exhibition
Contest, 1882.

AWARDED SILVER MEDAL INTERNATIONAL
INVENTIONS EXHIBITION, 1885.

RECORD OF WORK DONE

At Botallack Mine, St. Just, Cornwall, **TWELVE MEN** with **TWO** new Patent **CORNISH ROCK DRILLS** drove, sunk, and rose **288 FATHOMS** in **12 MONTHS**, equal to five times the Speed of Hand Labour.

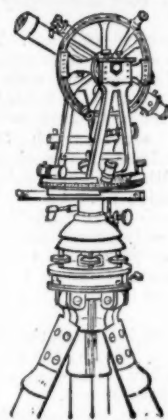
At Wheal Grenville Mine, Camborne, Cornwall, **SIX MEN** with **TWO** new Patent **CORNISH ROCK DRILLS** started from the **150 FATHOMS** level and put up in **EIGHT MONTHS** a **11 FEET** by **5 FEET PERPENDICULAR RISE** **46 FATHOMS 5 FEET 6 INCHES**, and about midway drove **1 FATHOM 5 FT.** No communication of any kind was effected until holing to the Shaft brought down from surface.

Estimates for **ROCK BORING PLANT** and **GENERAL MINING MACHINERY** on Application.

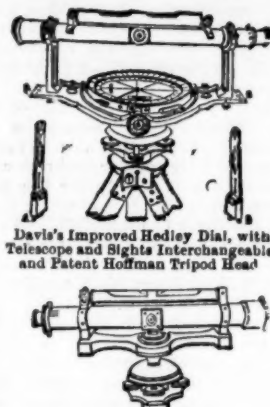
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ALL SAINTS WORKS, DERBY;
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Transit Theodolite with Patent
Hoffman Tripod Head, and
Trough Compass.



Dumpy Level with
Hoffman Patent Tripod Head.

**MINING, SURVEYING, AND
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**Davis's Improved Hedley Miners' Dials, with
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Revised Illustrated Catalogues Free to any Part the World.
 SECTION (A) MATHEMATICAL DEPARTMENT AND SAFETY LAMPS
 SECTION (B) ELECTRICAL DEPARTMENT.

Gold Medal Awarded Mining Exhibition, 1890.
 A. B. C. CABLE CODE, 4TH EDITION.

AWARDS: CRYSTAL PALACE, 1890; TASMANIA, 1891; KIMBERLEY, 1892.

CONCENTRATION.

The Clarkson-Stanfield Ore Reduction Co. (Limited).

In the CLARKSON-STANFIELD process of Concentrating Refractory and Complex Ores no water is required; dust is reduced to a minimum; the loss of Mineral through water-borne Slimes is obviated.

OUTPUT 1/2 TO 2 TONS PER HOUR, ACCORDING TO SIZE OF MACHINE.

CONCENTRATOR TO BE SEEN IN OPERATION AT THE COMPANY'S ONLY ADDRESS,

6, COLONIAL AVENUE, MINORIES, LONDON, E.

The Machine is superior to Sieves for Sizing Homogeneous Substances, such as Emery, Sand, and Powders, and may be used to great advantage in the preparation of Ochre.

N.B.—The owners of the Carndochan Mine, near Bala, North Wales, will, by arrangement, show their CLARKSON-STANFIELD plant working on a Refractory Low Grade Gold Ore.

NEW PATENTS.

LIST of APPLICATIONS for New Patents relating to Mining Metallurgical, Engineering, Railway and kindred matters, specially compiled from official sources for the "Mining Journal" by Messrs. Rayner and Company, Patent Agents, 37, Chancery Lane, London, W.C., who will forward all information regarding them free on application.

- 9940 Charles Wood and Albert Charles Coddick, 324, Grimesthorpe Road, Sheffield.—An improvement in fourway valves for regenerating of other furnaces.—May 11.
- 9941 William Burns, 263, Argyle Street, Glasgow.—Improvements in and relating to appliances for feeding water into steam boiler.—May 11.
- 9942 William Phillips Thompson, 5, Lord Street, Liverpool.—Improvements in or in connection with metallic packings for piston rods, valve rods, or the like.—May 11.
- 11109 Reuben Thomas Preston and James Holden, 77, Chancery Lane, London.—Improvements in stays for steam and other boilers.—May 11.
- 11024 Norman Dakin, 109, Calverton Road, Leeds.—Improved valve for steam engines, &c.—May 11.
- 11044 Charles Davine, 154, St. Vincent Street, Glasgow.—Improvements in steam engines.—May 11.
- 11097 John Jones, 18, Southampton Buildings, Chancery Lane, London.—An improved method or process for the treatment of gold-bearing antimony ores.—May 11.
- 11098 John Edward Lewis Ogden, 15, Southampton Buildings, Chancery Lane, London.—Improvements in gauge glasses for steam boilers and for like purposes.—May 11.
- 11254 David Rushworth, 91, Manchester Old Road, Heaton Chapel, near Stockport.—Improvements in or relating to fuel economisers or apparatus for heating the feedwater for steam boilers.—May 14.
- 11011 Robt Bruce Smith, 27, Liveredge Road, Higher Trammerville, Birkenhead.—Improvements in automatic feedwater regulators and in steam traps.—May 14.
- 11112 Joseph Butterworth and Richard Fletcher Christmas Tonge, 5, John Dalton Street, Manchester.—Improvements in metallic packings.—May 14.
- 11042 Adolf Gutensohn, 1, Queen Victoria Street, London.—An improved process and means used therein for disintegration of quartz and similar minerals.—May 14.
- 11013 Richard Ernest Bradford, 3, Meath Street, Battersea Park Road, London.—Improvements in compound fluid pressure motive power engines.—May 15.
- 11043 James Outhill, 41, Reform Street, Dundee.—Improvements in and relating to metallic packing for piston rods and the like for fluid pressure engines and machines.—May 15.

JOINT-STOCK COMPANIES.

NEW REGISTRATIONS.

THE following are among the joint-stock companies registered at Somerset House since our last notice:—

- South Zambesi Development Company (Limited).—Registered April 18 by Foss and Ledam, 3, Abchurch Lane, E.C. Capital £275,000, divided into 55,000 shares of £5 each. Objects: To acquire from the Fanga Company (Limited), the Sillind Company (Limited), and the Concessions Acquisition Syndicate (Limited), or either of them, certain concessions, options, licences, or rights, held by such companies, or some of them, in respect of mining claims, trading rights, and properties in the Mozambique territory and elsewhere in South and Central Africa; and generally to acquire any freehold or other farms, properties, mines, mineral deposits, grants, concessions, leases, claims, licences, water and other rights in Central Africa or elsewhere; to prospect for metals and minerals; to develop and turn to account such lands, &c., as may be acquired by the company; to construct, maintain and work rail and tram roads, telegraph and telephone systems, canals, wharves, piers, gas, water and electric works, &c.; as stock raisers, shipowners, &c.
- Kalgoorlie Consols (Limited).—Registered May 5 by Williams and Neville, Winchester House, E.C. with a capital of £225,000, divided into 225,000 shares of £1 each. Object: Primarily, to adopt and carry into effect an agreement expressed to be made between F. G. Williams (an attorney for E. W. Hocking and others) and the West Australian Mining Company (Limited) for the acquisition by purchase or otherwise of the gold mining properties known respectively as Nos. 1672, 1673, 1674, and 1675, the same being situated in the Kalgoorlie district of West Australia; and, further, to acquire any other mines, mining, water, and other rights, grants, leases, claims, concessions, options of purchase, metalliferous land, &c.; to develop and turn to account the same in such manner as the company shall see fit, and to carry on the business of a mining, milling, smelting, and metallurgical company in all or any of its branches; to construct, maintain, and work rail and tram roads; to employ and dispatch prospecting and exploring expeditions; to develop the resources of such lands, farms, estates, and other property as may from time to time be acquired by the company, by clearing, draining, farming, planting, and building thereon; as builders and contractors, farmers and graziers, stockraisers, shipowners, storekeepers, &c. The first directors of whom there shall be not less than two nor more than five—are to be nominated by the signatories. Qualification, £100. Remuneration: Chairman, £150 per annum; ordinary directors, £100 each.
- North Golden Crown (Limited).—Registered May 5 by W. T. Hick, 2, Church Court, Clements Lane, E.C., with a capital of £120,000, divided into 120,000 shares of £1 each. Object: To adopt and carry into effect an agreement expressed to be made between the Securities Conversion Association (Limited) of the one part, and this company of the other part, for the acquisition of certain mining properties and leases situated in the Karawana (White Feather) district of West Australia, and known respectively as Nos. 1178 and 725 (adjoining the Golden Crown lease); to work and turn to account the same in such manner as the company may deem expedient; and, further, to acquire any other mines, mining, water, and other rights, grants, leases, claims, concessions, options of purchase, &c., in any part of the world, and to carry on the business of a mining, milling, smelting, and metallurgical company in all or any of its branches. The first directors—of whom there shall be not less than three nor more than 15—are to be elected by the signatories. Qualification, £100. Remuneration: £100 per annum each, with a percentage of the profits; Chairman, £200 extra.
- King of the West Gold Mining Company (Limited).—Registered May 5 by Mayo and Co., 10, Drapers' Gardens, E.C., with a capital of £50,000, divided into 50,000 shares of £1 each. Object: To acquire any mines, mining rights, grants, leases, claims, concessions, options of purchase, claims, farms, lands, and other properties, real and personal, in Australia or any other part of the world; to develop and turn to account the same in such manner as the company shall deem expedient, and to carry on the business of a mining, milling, smelting, and metallurgical company in all or any of its branches; to construct and maintain rail and tram roads, wharves, docks, piers, &c.; as farmers, planters, stock raisers, builders and contractors, graziers, shipowners, storekeepers, &c.

Harnan's Crosses Gold Mining Company (Limited).—Registered May 9 by Hays, Schmettau, and Anstrum, Abchurch Lane, E.C., with a capital of £175,000, divided into 175,000 shares of £1 each. Object: Primarily, to acquire mines, mining rights, and auriferous land in Western Australia or elsewhere in Australasia; and any interest therein; and, further, to acquire any other mines, mining, water, and other rights, grants, leases, claims, concessions, options of purchase, metalliferous land, &c., in any part of the world; to develop and turn to account the same in such manner as the company shall see fit, and to carry on the business of a mining, milling, smelting, and metallurgical company in all or any of its branches; to develop the resources of such lands and other properties as may from time to time be acquired by the company by clearing, draining, irrigating, planting, farming, or building thereon; to construct and maintain rail and tramroads, piers, docks, wharves, warehouses, gas, water, electric and hydraulic works.

Komata Consolidated Gold Mines (Limited).—Registered May 11 by W. H. Barber, 24, Clapton Square, N.E., with a capital of £10,000 in £1 shares. Object: To enter into and carry into effect an agreement with George L. Boddie to purchase or otherwise acquire, lease, work, exercise, develop, and turn to account, sell, dispose of, or otherwise deal with any mines, mining working, mining claims, alluvial ground, or any interest therein, and to prospect and explore mines and grounds supposed to contain minerals, ores, or precious stones in New Zealand or elsewhere.

Vonaxela Exploration Syndicate (Limited).—Registered May 9 by G. and W. Webb, 39, New Broad Street, E.C., with a capital of £2400, in £1 shares. Object: To prospect for gold, &c., in Vonaxela, South America, and as miners and smelters generally. Registered without Articles of Association. Registered office, Winchester House, E.C.

CONTRACTS OPEN:

FOR MINE, QUARRY, RAILWAY, AND ENGINEERING WORK, STORES, &c.

* We shall be obliged by being promptly placed in possession of particulars regarding contracts open for competition, and of the results of successful tenders. In the latter case contract price should be given.

The date given is that by which tenders must be delivered, in nearly all cases further information can be obtained on application at the addresses given. In applying for such the name of "The Mining Journal" should be mentioned as the original source of the information, concerning which further particulars are required.

HOME CONTRACTS.

- Coal and Cannel, June 4 (Salford).—For the supply of coal and cannel during one or two years, for the gas department of the County Borough of Salford. Forms may be obtained from the gas engineer, Bloom Street, Salford.
- Coal and Coke, June 10 (London).—For the supply of coal and coke at the police offices, stations, and section houses, and for steam launches in connection with the Metropolitan Police district for a period of one year. Forms may be obtained from the Receiver, at his office, New Scotland Yard, E.W.
- Tug Boat, June 12 (Belfast).—For the construction and supply of a twin screw tug-boat, for the Belfast Harbour Commissioners. Copies of specification, form of tender, and any further information required may be obtained at the Harbour Office. Sealed tenders, on the special forms provided for the purpose, to be addressed to Mr. W. A. Currie, secretary, Harbour Office, Belfast, enclosed "Tender for Tug Boat," and sent in by June 12.
- Locomotives, June 15 (Sofia).—For the supply of nine locomotives. Applications to the Ministry of Public Works and Communications, Sofia, Bulgaria.
- Driving Drift (Choppington Colliery).—For the driving of a stone drift (about 348 yards in length) from Harry to Pissay Seam. For particulars apply to the manager, Choppington Colliery.
- Excavating (Dalbeattie, Scotland).—For excavating and widening about 140 lineal yards of the bank opposite Dalbeattie Quay, for the Dalbeattie Harbour Committee. For particulars and specifications of the work apply to Mr. Alexander Wilson, Dalbeattie, secretary to the committee.

THE COAL TRADE IN ROMANIA.—The imports of coal into Roumania during last year amounted to about 400,000 tons, as against 312,137 tons in 1894. The greater part of this is obtained from England. Rhenish-Westphalian colliery owners are endeavoring to compete with English merchants, the Rhenish-Westphalian Syndicate having secured a contract for 30,000 tons of coal for the Roumanian State Railways.

THE COAL TRADE OF BREST.—The English Consul at Brest states that during last year the quantity of coal imported was about 81,000 tons, of which about 4000 tons arrived in British vessels, and about 11,000 tons in French vessels; of the former 3-5ths came from Cardiff. The other ports in the district also receive the bulk of their coal from Welsh ports. French coal, which is now solely used in the French Navy and the Brest Dockyard, is brought from Dunkirk in French vessels.

MINING IN VICTORIA.

(FROM OUR OWN CORRESPONDENT.)

THE yield of gold in the various gold districts of Victoria during the quarter ending March is very satisfactory as compared with preceding periods.

Since my last the Creswick returns have been published. The total gold won for the quarter in this district amounts to 11,779 ounces 18 dwts., a slight falling off as compared with the corresponding quarter last year. The Berry Consols holds the pride of place with a yield of 3574 ounces 12 dwts., whilst the Berry West comes a good second with 3376 ounces 7 dwts., the now defunct Madame Berry closing its wonderfully regular and rich career with 2124 ounces 8 dwts. Dividends and royalty for the same period have been paid, amounting to £18,870, of which the Madame Berry paid £7915, and the Berry Consols £3517. In quartz only a small parcel of 10 tons have been treated for a return of 22 ounces 4 dwts. 6 grains. The outlook for the present quarter is much better. The Madame Berry West, the Extended, and the Berry No. 1 are all now in full swing.

For the Talbot division, of the Maryborough district, the total for the quarter just ended is 1325 ounces. During the period several nuggets, ranging up to 43 ounces, have been unearthed, one of 22 ounces being obtained at a depth of 22 feet.

The returns from the principal mines in the Indigo division, of the Beechworth district, for the first quarter is as follows:—8071 ounces; small parties, 200 ounces; total 8271 ounces.

The yield for the quarter from the Pitfield and Rokewood Mines alone, in the Ballarat district, amounts to 3495 ounces 12 dwts., against 1807 for the corresponding quarter of last year.

The gold yield for the quarter for the Omeo division of the Gippsland district amounts to 4748 ounces 4 dwts., of which 4245 ounces 12 dwts. were taken from quartz and 503 ounces 11 dwts. from alluvial. The number of miners in this district has increased from 1601 in 1891 to 2788 at the end of 1895, and whilst the average value of the gold raised per miner for the whole colony last year was £92 16s., the Gippsland average was £100 for each man engaged.

So much has been written lately touching the value of the Gippsland field that an account of one of the latest ventures from that part floated at home last year may not be without interest.

The Omeo Gold Mines Company.

This mine is situated about eight miles from Omeo, in Long Gully (Cassilis), the most westerly tributary of Swift's Creek, and comprise workings on several different reefs of varying character. The geological features are mainly mica schists and nodular schists, except that the rocks on the southern watershed are much silicified; lenticular grains of quartz stand out on the weathered schist, giving them a gneissic appearance. Many of the quartz veins are along lines of faulting and fracture, and some interesting features are revealed, especially in the neighbourhood of the granitic and dioritic intrusions. The area of this ground is about 39 acres, and some rich surface finds have been made in this locality, and, in particular, on this property. Hitherto the claims in Long Gully have only been worked to shallow depths by co-operative parties with small capital and primitive appliances. In a great number of instances the claims were abandoned when they got below the schists, which means practically the end of stone with free gold, for below water level harsh, solid, complex mudic comes in, and until recent years there were no processes available in the district for treating the ore, in addition to which the cost of transportation to the nearest battery of the free milling ore was so high that the yield had to be heavy to pay, all of which is now altered; the roads are better, carriage and labour cheaper, and large chlorination works are erected in the district. The Omeo Gold Mines Company is quietly going ahead with progressive work, and are adopting the sound policy of opening out the mine before putting on machinery. The stone now being got out is being crushed at a public battery near by at a cost of 12s. 6d. per ton. The country along the eastern portion of their ground is hilly, given in about 500 feet along the main tunnel from the opening some 700 feet of backs. The three principal reefs running through the property have been named—the Western, the Lena (in the centre of the ground), and the Lily on the eastern boundary, with two small parallel formations between the Lena and Lillie reefs, carrying apite veins and thin seams of quartz.

The western lode, which underlays to the east, and about 6 feet wide, has been intersected at a point 163 feet in the main tunnel, where an underlay shaft has been sunk to a depth of 130 feet. The tunnel has been continued on past the shaft another 200 feet towards the other two reefs, and will require another 100 feet, for which the contract is let before they are reached. This lode has been driven along its course from the point of intersection in the main tunnel for about 270 feet to the north and 140 feet to the south, with a crosscut put in the north drive of about 50 feet to catch the Lena lode, but for some reason has been abandoned.

The Lena reef has been opened up along its course in the higher part of the ground by a tunnel in about 220 feet driving south; at this point about 200 feet of backs are obtained. A rise is being put up for stopping and ventilation purposes. The reef here is close on 2 feet wide, and is good golden stone.

The Lillie reef has also been opened up along its course by a tunnel in about 150 feet driving south from the north-east corner of the ground. The features of the lode are similar to those of the Lena.

The mine is well known to most mining men, for at one period of its existence it had a serious struggle to survive for want of capital, but the present manager, by persistent work and self-denial, brought it to productiveness, and for a considerable period before being floated in England realised from it an average return of 2 ounces 3 dwts. per ton. It would be a gross exaggeration to say that it is now, or ever has been, one of the great mines in the Omeo district, but what is more to the point it is a thoroughly genuine one, opening up very satisfactorily, and very promising for future working. Manual labour in tunnelling is almost a thing of the past in any workings that is worth being called a mine in Victoria to-day. In Mr. Cardinal, the manager, the directors have an honest, straightforward, and a practical man who knows the occurrences of lodes in the Omeo district, which is the highest compliment that can be paid to a Gippsland prospector. In Mr. Hubert Johnston, the local director, they have the benefit of being guided by one who for years past has stuck to the Omeo Gold Mines Company when a co-operative claim at a critical moment, in time to save it and bring it to its present healthy stage.

The directors and shareholders must be plainly told that a fair amount of working capital is required to be sent out before it can hope to reach the dividend stage. Investors grow wiser by experience, and they are beginning to discover that nothing is to be gained by putting their money into ventures of this kind unless they are prepared to prosecute mining with vigour.

The most successful mines in Victoria are those that have been persistently worked for years, and it is scarcely necessary to add, years before they paid dividends. The mining public here very often look on English owned companies as a great evil, and the very circumstance of our having to mention it now shows that there is quite sufficient need of caution. No company will be permitted to occupy ground for speculative purposes, and it is a pity those directors who practise it do not see its impolicy, and how much a company loses by it in every way. The future of the great gold-bearing lodes of the Omeo, Glenwills, and that almost terra incognita stretching northwards through the Dark River district to the promising fields of Mount Elliott, and eastwards through a vast auriferous tangle of mountains to Bonang and Bendoc, gives promise of profitable employment to thousands of miners, if the industry is not temporarily strangled in its infancy by mining company promoters; therefore, any failure through neglect of operations or lack of means to prove the ground taken up is likely to brand the district with a bad name, which is not likely to be submitted to without the facts being made public.

The Korumburra Coal Mine.

Very rapid strides are now being made in developing the coal seams over several thousand acres of forest country in south-west Gippsland, which is intersected by several lines of railways and sidings in many directions, having direct communication with the main lines to Melbourne. A few days back a considerable purchase of shares of Korumburra Coal Company was made for English account; about 25,000 shares in all have been taken, and authority has been given by the directors for the opening of a register in London. Negotiations are also pending for the purchase of the entire mine.

In giving a few facts concerning the operations of this company, I wish it to be distinctly understood that I have not visited the mine this year, and that the management have not replied to a note of mine asking for some information as to working expenses and cost of mining; therefore, should any inaccuracy appear in the few notes taken from rough records by me, they have only themselves to blame. Usually managers are only too ready to impart information to the Press. The Korumburra Company is the outcome of the Korumburra and Jeetho Company, having 100,000 shares, and the Coal Creek Extended Company (not to be confused with the Coal Creek Proprietary, which gained notoriety a few months ago in a wordy tussle with the Melbourne Argus in connection with Government contracts), also 100,000 shares.

When the amalgamation took place the combined capital of the two companies was reduced to £37,500, in 75,000 shares of 10s. each. Of these 25,000 were issued as No. 1 preference shares, 18,000 as No. 2 preference shares, all fully paid up to 10s., and 6700 remain as contributing shares, which are paid up to 5s. 8d. per share. On the No. 1 preference shares two dividends of 3d. per share have been paid; four dividends more of a similar amount will clear off their lien on the mine, and they then become ordinary paid up shares.

The No. 2 preference shares then come in for three dividends of a like amount, when they also disappear, and all paid up shares rank alike.

The 6700 contributing shares have a liability of 4s. 4d. per share, but participate equally in any dividends declared on ordinary paid-up shares.

The balance of the shares—viz., 25,000—are fully paid up. I have thus tried to unravel the different series of its share account. I can say nothing concerning its capital account; it is one of those close companies, chiefly in the hands of one respectable firm of brokers, which rarely allow much to reach the public ear; therefore, beyond saying its funds are as healthy as the general run of mines is practically all I know about it or can ascertain. Of the mine itself, it is situated 69½ miles from Melbourne, and within 10 minutes' walk from Korumburra railway station; its area is 500 acres. Sidings to connect with the main line have been constructed at the company's expense. The seam of coal is not large, but is of an excellent quality. Both the Government Geologist and his assistant, Mr. James Stirling, reported in 1894 on the lease. Counting only such seams as exceed 20 inches in thickness, their estimate of future reserve in the Coal Creek Extended area was 1,500,000 tons, and in the Korumburra and Jeetho area 750,000 tons, but since this report was made several very important finds and developments have taken place, and it has been computed by a number of experts that at least 20,000,000 tons are available to be mined in the Korumburra district.

The company has sunk its shaft to a depth of 237 feet, and when at the mine last year it possessed excellent pumping and winding plant, and was then being worked on the long wall system. It has judiciously kept ahead of the ordinary work by boring operations and a systematic exploration of the mine.

At the present time the company appears to have fallen off in public favour, the Outtrim Mine, a few miles distant, ranking first. Nevertheless, the Korumburra's record during the four years it has been delivering coal into the market is a good one, and is now under contract to the Government of Victoria for the railways to deliver 30,000 tons at 9s. 11d. per ton at the pit's mouth. This contract terminates about September next. The Victorian coal companies have had to face a persistent opposition, sometimes of the bitterest nature, from within and without. A great deal might be justified, because of the impediments they have placed in the way to commercial progress. The industry is in the hands of a "ring," who possess no conscience, in a political sense, in combining to compel the Victorian taxpayer to pay tribute to shareholders. To put the matter in a few words, the public exchequer of this colony has been for many years a reservoir for them.

While I have said this much in condemnation of Victorian coal tactics, from the voluminous geological and mine reports before me, and the repeated tests proving the excellent steaming qualities of Korumburra coal, I am not disposed to regard other coal fields with greater favour, and it is no less true the Korumburra's Company Mine will remain a good colliery for a number of years under proper management.

LONDONDERRY EXTENDED.

The directors, in a circular to the shareholders, give particulars of the work done on the property during the last three months. The lease having been approved by the Minister of Mines it was fully manned and sinking operations proceeded as rapidly as possible as soon as the Government exemption expired. At the 60 feet level a lode consisting of loose pieces of ferruginous quartzite mixed with decomposed hornblende and schist was cut through, also a vein about 1½ inch in thickness of asbestos of good quality, although the fibre was only about 2 inches in length. Below this depth the country passed through was unsettled, consisting of diabase rock, decomposed felspar, and hornblende, while a stringer of opaline quartz, 9 inches thick, was found coursing through the formation. By the last advice the shaft had been sunk to a depth of 106 feet and the country appeared more settled. Several narrow leaders of opaline quartz and asbestos have been cut through, and our manager intended shortly to commence crosscutting, as the continued presence of gold gave every indication of a permanent auriferous lode being in the vicinity of the shaft, and the several assays taken were very favourable.

SOUTH AUSTRALIAN LETTER.

(FROM OUR OWN CORRESPONDENT.)

ADELAIDE, APRIL 21.

SEVERAL persons have lately left here for London, with the view of floating various gold mines on the English market. It is to be hoped that their visit will have the effect, at least, of drawing attention to the fact that West Australia is not the only portion of this great island-continent where payable gold is found. There are several mines in South Australia at the present moment sufficiently opened, to show that, with a comparatively small amount of capital, very payable returns could be obtained. Many of these, in the language of correspondents to the papers, are starving for want of a little capital to work them. Many again, with a fair amount of working capital, would undoubtedly become dividend-paying within 12 months. New discoveries in the old gold fields are frequent, and there is good ground to hope that before long it will be seen that South Australia has gold mines as well worthy the attention of adventurers as those in other colonies. The Warden of Gold Fields showed me only yesterday a splendid lump of quartz which he had brought down from Wadnaming; rough gold was readily visible all through it. The specimen came from a mine which was the first discovered on that gold field, and which has now a splendid shoot of gold between 40 and 70 feet from surface, besides payable stone from near the surface to the depth of 140 feet. Some of the finest specimens ever seen in the colony have been found in this mine. Adjoining leases on the same lode are also looking very promising. The Milo Mine, about 3½ miles north-east from this, has been paying for some time past; 7 miles to the east of the Milo and Virgin group of mines is the Taltabooka gold field. I have just received from London the results of nine assays of 15 dwts. of quartz from three of these mines. The stone was taken haphazard from the lodes—indeed, it could not be picked, as the gold was not visible in it. The whole averaged 2 ounces 2 dwts. 15 grains of gold per ton, and 13 ounces 12 dwts. of silver per ton; the silver would pay all working expenses. Yet because the mines are in South Australia and not in West Australia, English investors fought shy of it. At the same time these mines could be worked at a third of the cost that most West Australian mines would require, and could be purchased at a fourth or fifth of the price that they would be valued at if in the Western colony. Well, perhaps our turn will come in a year or two, if not sooner. We know what we have got in South Australia, and pity the folly of those who will invest in almost anything if it is in West Australia, while they think our mines not worth their notice.

Another very rich mining district in this colony is Blumberg, about 30 miles from Adelaide, in the beautiful hill country through which the River Torrens flows. Some grand discoveries have been made there since my last notice of the place, and in a very short time we may expect to hear of more.

The other day I met a party of three or four men who had just come down from the Northern Territory—the Port Darwin country. They reported very favourably on the new discoveries there, and expressed their opinion that the Northern Territories would rival West Australia in golden riches. On hearing the steps which had been taken by Mr. Pritchard-Morgan, M.P., in getting from the South Australian Government the right to mineral lands in the Northern Territory, these men, who were men of practical experience and knowledge of the country, said Mr. Morgan had secured the pick of the gold-bearing land. We are anticipating great things from his efforts in developing this part of the province.

I have occasionally alluded to Hayercraft's Gold Extracting Process, the invention of an Adelaide man. It is likely to become a powerful rival to the cyanide, as it is cheaper, more expeditious, and fully as effective—in fact, Hayercraft's can treat certain refractory combinations that are not amenable to the cyanide. A large plant has been ordered for West Australia to treat 50 tons per day. It is expected to be ready for shipment very shortly. I enclose a tabulated statement showing several returns as obtained by Hayercraft's and by the cyanide process:—

MEMO. OF NORSEMAN STONE TREATED.

Name.	Weight of stone.	Gold obtained per ton of stone.	Actual contents of stone per ton.	Percentage obtained.
Desirable...	84 lbs.	58 7 12...	61 11 10...	95
" "	35 cwt.	8 3 10...	9 1 12...	95
" "	216 lbs.	29 0 18...	30 7 0...	95
Norseman Crushing Co.	68 "	4 9 22...	4 13 23...	95
" "	3 cwt.	6 8 2...	6 17 22...	93
John Bell	6 lbs.	26 3 8...	26 18 6...	97½
Midas	6 "	20 4 11...	20 8 8...	99
No. 1 North Norseman	6 "	28 4 16...	29 14 12...	95
Mt. Benson	1 "	1118 18 6...	126 12 15...	91½
" "	6 cwt.	25 6 16...	31 17 1...	80
Tom Elliott	6 lbs.	2 17 13...	2 19 21...	96½
Lady Mary	3 "	8 4 21...	8 18 3...	93
" "	6 "	12 2 11...	13 7 17...	90
Three Colonies	95 "	147 1 11...	160 18 9...	91½
" "	35 "	31 14 16...	34 3 20...	91½
Onkaparinga	5 "	17 8 12...	18 13 18...	93
" "	1½ "	37 6 15...	39 17 0...	94
United Scotchman	135 "	35 18 10...	38 1 6...	94
Edward's Norseman	20½ cwt.	9 15 8...	10 12 0...	92

* These lots all contained pyrites that in practice would be retreated, and would materially increase the returns.

CYANIDE.

STONE TREATED BY BATTERY AND BY HAYERCRAFT'S PROCESS.		By Battery and Cyanide.		By Hayercraft.	
Name.	Weight of stone.	Return of gold per ton.	Weight of stone.	Return of gold per ton.	Percentage obtained.
Mt. Benson	7 1 20...	14 16 0...	6 0 11...	25 6 16...	80
" "	2 5 3 14...	4 3 19...	3 19 13...	10 0 84...	84
" "	1 2 8 4 9...	4 1 3 9...	12 5 12...	5 12 88...	88
Princess Royal	53 1 7...	14 1 16...	53 1 2...	17 9 22...	97
" "	42 3 0...	5 12 6...	40 3 7...	9 4 12...	96

These lots contained pyrites that in practice would be retreated.

"THE NEW REVIEW."—We have received a copy of the June number of "The New Review," which contains several interesting and up-to-date articles. In view of the present apathy in Matabeland, Sir John Willoughby's excellent description of the progress of events in that country during the past six months will be read with considerable interest. The contents also include:—Edgar Allan Poe (Chas Whibley); Arabian Poetry of the Days of Ignorance (Wilfrid S. Blunt); Made in Germany; The Assassination of Nasir-ud-din Shah (Edward G. Browne); Beethoven and his Ten Symphonies (J. F. Ranciman); Early days in Rhodesia (Lady Henry Paulet) &c.

We deeply regret to announce the death of Mr. Robert J. Scriven, who has been secretary of the Palmarejo Mining Company for nine years past.

TUNNELLING BY COMPRESSED AIR.

By E. W. MOIR, M.Inst.C.E.

(Concluded from page 658.)

MINING ON THE GOLD COAST AND ASHANTI.

By L. M. BYLES.

AT Blackwall we progressed, for more than two months, at the rate of 252 feet 6 inches per month under the Thames, and removed more material than has ever before been removed from a single face in any tunnel in the time. The borings indicated and the sinking of shaft 2 on the Middlesex side proved that there was a large bed of ballast through which the tunnel had to be driven. This ballast was struck in the roof 725 feet from the centre of shaft 3, and made itself evident by the large amount of air that escaped though it and bubbled up in the river. A stoppage of about 10 days was made in order to fit sliding shutters on to the shield. The shutters are controlled by a screw at each end, which keep them up against the face of the unexcavated material. If we assume that they have been screwed out towards the cutting edge as far as they will go, the shield is then ready to be pushed forward. Immediately the pushing commences the nuts on the shutter screws are loosened, and as the shield moves ahead the shutters slide back, the space in front of them becoming filled with gravel. As soon as they have slid back as far as they can come this gravel is excavated, the shutters again screwed forward, and the same process repeated, until the shield has been moved 6 inches, or sufficient to allow of another cast-iron ring being erected within the thin iron hood which overlaps the last completed ring at the back of the shield. The space left out by the lining by the advancing shield was filled up with lime grout. Mr. Greathead's apparatus being used for this purpose. While the gravel was being taken away from the front of the shield, large quantities of air continually escaped. It was then impossible for days at a time to open the upper shutters at all, the whole of the excavation being removed through small openings, 3 inches by 7 inches, in the shutters, which could be immediately closed by a small sliding door. On opening these small doors I have often seen the stones churned into such a turmoil with the escaping air that the fire was flying from them. Progress under these conditions was very slow and sometimes disheartening. During one week only 5 feet of cast-iron tunnel was completed, but as the men became more used to the work and additional jack power was provided, it became possible to ultimately fix 20 feet a week, or 65 feet in one month, in the gravel as against 255 feet while under the clay. The crown of the tunnel at one point came within 5 feet 6 inches of the old river bed for a distance of about 150 feet, and the material composing this 5 feet 6 inches was all Thames ballast. We applied to the Thames Conservancy to allow us to put a high plaster of clay over this part of the bed, 150 feet wide and 15 feet thick, which permission they granted, and there is little doubt that we could not have made the tunnel at this point without this clay plaster. Frequently, for days on end, we drove the top of the shield through the clay which we had ourselves dumped in the river, the natural bed having been entirely removed below. Having passed beyond a part of the clay bank, it was dredged up and redeposited further ahead, where it again did faithful duty. All the time that this portion of the work was being constructed, great care was exercised in regulating the pressure to suit as nearly as possible the tide in the river, for a slight increase over the hydrostatic head would have blown the artificial clay bed off. This, as a matter of fact, occurred on two occasions, when the tunnel became one-third full of water in less than five minutes. We endeavoured to keep the air at the pressure of the water at the top of the shield, to save as much as possible the risk of a blow-out, and, in consequence, had to deal with an immense inflow of water through the gravel at the bottom. It would have taken about 13 lbs. per square inch more at the bottom of the shield than at the top to dry the tunnel completely, owing to its large diameter. It is very difficult to tell what the head of water is in a case of this sort, as the escaping air drives some of the water out of the ballast, thereby reducing its depth, and the bubbles of air being mixed with the water also lightens it.

We started out on the river on September 16, 1894, when we laid the first ring, and we struck No. 2 shaft on September 26, 1895, having done the distance in less than 12 months, allowing for delays due to fixing the shutters and the ice pack in the river in February 1895, when we could neither handle or deposit air over our heads, and that which was there became dangerous. We have now passed through No. 2 shaft on the Middlesex shore, and have driven the uphill grade to No. 1 shaft, and will soon be working on the last lap which finishes on the Poplar side of the Great Eastern Railway branch line, where the "cut and cover" portion of the tunnel is already awaiting us. We are proud to think that we have lost no lives in the tunnel proper, due to the effects of compressed air, as we had reason to fear we might. After the completion of the cast-iron tube there remains but the concrete, white glazed lining and the road surface to finish, when the Blackwall Tunnel will commence its career of usefulness.

The Blackwall Tunnel is remarkable for several things. It is the largest shield-driven tunnel ever constructed. It is the only example of a tunnel which has been driven through ballast under a river bed, and that, too, within 5 feet 6 inches of it. It is the only large subaqueous tunnel that has been undertaken by the contractor at a fixed price, all the others having been undertaken by companies who have paid on a basis of prime cost. It is acknowledged by the leading experts to be the most difficult piece of tunnelling ever undertaken. As the lining of cast-iron tunnels costs from 30 to 40 per cent. of the total expenditure (in the St. Clair Tunnel it was about 33 per cent.), it is a pity that some scheme has not been tried for reducing the lining, using temporarily a thinner casing, and ultimately strengthening it with concrete or brickwork. Concrete might be used, and is being used, with great advantage in the lining of railway tunnels; and I do not see in the London clay and similar strata—absolutely watertight—why half or two-thirds of the lining should not be removed, and the lining so removed in short lengths replaced by concrete. An additional lining could be inserted in the bottom of the lining which could be drawn out by a union screw or a hydraulic jack from above. Of course, in the case of gravel or water-bearing strata, it could not be done with advantage—by this means the high rate of progress due to the cast-iron lining could be maintained without so much cost. Some of the contractors working on the recently-constructed cast-iron lined tunnels in Glasgow have done considerable portions without the aid of any shield whatever, simply excavating the clay or sand and building the steps in place. A light cast-iron ring, reinforced by cross ties and struts of wood until concrete lining was put in, would be very much less expensive than a cast-iron one of equal strength, and the plates being lighter would be more easily handled.

* Paper read before the Society of Arts, May 13, 1895.

THE INTERNATIONAL AGENCY (LIMITED).—On and after June 1 next the advertising and printing departments of this house will be located at No. 19, Farringdon Avenue, London, E.C.

THE discovery of gold in different parts of the world at intervals during the present century has drawn the investor from the old fields to pastures new, leaving incidentally the old centre of the mining industry either to the ignorant native or the unscrupulous sharper, who finds enough gold in the pockets of a gullible public to enable him to dispense with the more tedious processes of mining, grinding, and washing; and, perhaps, not the least hardly dealt with centre is that situated in the extreme western corner of the Gold Coast in West Africa. Years ago, when the world was younger and science had not advanced so far as she has to-day, the little Crown colony, then under a chartered company, was looked upon as one of the sources of England's wealth; it was from thence that the black slaves of America were mainly carried; it was from thence that the main part of Europe's supply of iron was derived; and it was from thence that a large part of England's gold, then, as now, the staple medium of exchange, and, therefore, the best outward symbol of wealth, was drawn. Now we find some 20 or 30 companies dragging on an existence with prospects, in many cases, far from bright.

The Anobra River, along whose banks the main gold beds lie, flows down from the Hinterland of Ashanti, over a shallow bar impassable to shipping, to the sea at Axim, some 70 miles from Cape Coast Castle, and about the same distance from the boundary of the French Ivory Coast. At this point, where the river joins the sea, the curious observer notes with awe thousands of pounds worth of machinery lying rusting on the sands; some old, some fairly new, all paid for and delivered on the Coast, none ever used, none ever moved a foot from the spot where it was landed some years ago. Following the river from its mouth in a canoe, and landing from time to time to explore some half beaten path opening through the mass of impenetrable bush which lines the banks, one discovers more and more machinery of patterns old and new carried thus far and then abandoned, sometimes from the difficulties of transport, sometimes from less worthy motives. Here, in the gloom of the forest, one sees immense fly-wheels or gigantic boilers rolled through the bush miles and miles, and then left to the damp and rust to destroy, useless hideous witnesses to a barbarous country's silent opposition.

Some years ago the Gold Coast Government offered to build a railway from the Coast to the chief mining camps in order to facilitate the transport of machinery. But the scheme met with such a strenuous opposition that it was finally abandoned, and the old state of things continues. Now it is proposed to lay a metallic road, along which heavy carts can pass, carrying the necessary implements, but whether this scheme will share the fate of its predecessor it is difficult to say.

The Appantoo Mines lie about 20 miles back from the Coast, and bear a good name. They have been established for years, and still succeed in getting a good output. The Taquah and Obosu Mines are also sound and capably managed. The Eja and Bifoo Mines have only recently begun work, but offer every indication of ultimate success. The gold vein runs up through Denhera into Ashanti, and it is expected that mining operations will soon be successfully commenced in the new districts. The Johannesburg Gold Syndicate, capably represented in West Africa by Major Bolton, has acquired an extensive concession around the banks of the Ofui River, just on the Ashanti border. Major Bolton has tested the gold-bearing properties of the soil wherever practicable over this territory, and reports that about 30 feet below the ground he has found a deposit of from 2½ to 3 feet thick of small black stones, containing gold. The strata is, he says, enormously rich in coarse gold and nuggets. Below the deposit comes a bed of quartz, but it is expected that further borings would reveal lower beds of gold.

Petroleum has just been found at Epu (3 miles from Half Assinu) in large quantities, and is to be worked this year.

On the whole, the country struck me as rich in gold of that peculiar light colour common to West Africa, which would give handsome dividends to any company honestly formed and properly worked.

THE GOLD FIELDS OF DUTCH GUIANA.

By A. I. MATHER.

IN my last letter I alluded to quartz not being easily located. Disintegrated quartz is freely found on all the numerous creeks, also nuggets of gold, some surprisingly large. In passing along the rivers in the extreme dry season regular veins of most promising quartz, crossing the rivers diagonally, may be observed. As yet no attention has been given to quartz mining, as the alluvial washings have paid sufficiently well to amply remunerate all engaged. Beneath the gravel of the various creeks is usually found a hard yellow clay, and sometimes a bluish white, changing downwards to a soft slate. That this belt of country contains a most rich deposit of precious minerals no one can doubt who has seen it. More than one expert who has reported on this subject have given the opinion that the Guiana district is destined to become the greatest gold field in the world. The question naturally arises why so much mineral wealth has been allowed to remain so long comparatively unknown. An answer to this is easily found. The exaggerated tales of travellers, who desire to make themselves heroes, have pictured this region as a death trap; and, with the hand of a master, they paint the awful horrors of a life in the bush. These alone are sufficient to deter the average explorer; yet some have braved the "awful bush," and find that these accounts are tinged with a great deal of Munchausenism. Again, the mining laws permit of individual to secure an almost unlimited extent of country by the mere payment of a small tax, and to hold the same so long as the tax is paid. Upon the first discovery of gold large grants of land were taken, and since all "finds" belong to the lessees of land under the mining laws prospectors can file no claim for rich finds. The lack of persistent application, so characteristic of the people of this colony, has also done much to prevent the development of mining. So far as health is concerned, a person with a good constitution by a careful attention to cleanliness and diet, with a proper regard for hygienic conditions, will be enabled to live comfortably in this climate. A prolonged residence in the bush has a tendency to develop malaria, which is dissipated by a change to a colder climate. I spent a whole year in this climate without a moment's sickness; in my second year I had several attacks of malaria, which were speedily eradicated by a change of climate. The days are quite hot, the average rating of the thermometer throughout the year being 85°. The nights are, however, cool, and in the bush the use of blankets are indispensable for a good night's rest. Like all tropical countries, there are the rainy and dry seasons. These are again subdivided into the long and

short rainy and dry seasons, corresponding to the four seasons in the temperate zones. October is the hottest month usually, and the rainy seasons are the most healthy, and the periods also when the greatest amount of mining is carried on. Concerning the richness of the gold deposits, I can state a few facts which came under my personal observation. One placer mine, now owned and managed by a syndicate in America, who purchased the same in 1892, and who at the present time of writing still have charge of the property, is an exceedingly rich and valuable property. This tract of land contains something above 35,000 acres. The property has been continuously worked since 1879, and the former owner had taken about half a million dollars from it previously to the sale. Notwithstanding the loose and slipshod methods of working peculiar to this country, the Government books show it has produced as high as \$85,000 in a single year. When the mine changed hands it was paying its owner a net profit of \$3000 a month, with 40 labourers employed. The mining already done had been so poorly performed that second and third washings have since paid handsomely. This place may be said not to have been prospected for more than one-tenth of its area, and it will require an entire year to make a thorough prospect. In my next I will give some estimates of spots on this mine.

MIXED SULPHIDE ORES.

By ALFRED C. PASS.

THE subject of the successful treatment of mixed sulphides is one of such great economic importance, and promises such enormous profits to the man who first solves the problem, that it is not surprising that metallurgists all over the world have been experimenting on many lines to treat this material. The quantity of ores of this description is immeasurable. In some places it may simply be quarried, not only at the Broken Hill Mines, but also in the United States. As is well known, this treatment is applied to sulphide of lead, when combined with sulphide of zinc, and containing usually with these a varying amount of silver. At the Broken Hill Mines, from whence such enormous quantities of lead and silver have been extracted, the ores hitherto treated have been generally carbonates, but the whole of these carbonates were originally mixed sulphide ores, which by the slow processes of Nature, extending through past ages, have become decomposed. The result has been that the sulphides have been oxidised, and during oxidation the soluble sulphate of zinc has been leached by the action of water, leaving the lead and the silver in a form suitable for simple metallurgical treatment, so that they may be cheaply smelted in low blast furnaces. What Nature has done slowly during long ages Man is now endeavouring to accomplish by a combined chemical and metallurgical treatment. To successfully smelt mixed sulphides in the crude state, or even after a preliminary calcination, is a metallurgical impossibility. When an attempt is made to smelt such ores in a blast furnace even after calcination, the zinc present in the ore is volatilised, and in passing off it, like a bad companion, leads the lead astray with it so that little or no lead and silver are produced. It is a matter of necessity for successful treatment to first get rid of the zinc; this has been attempted in many ways, but usually by first calcining the ores at a low temperature to convert the zinc into oxide, which can then be readily dissolved by treating the ore in vats with dilute sulphuric acid, which leaves the silver and lead undissolved. After such treatment the residual ore may be readily smelted in a blast furnace, and all the lead and silver recovered. The problem hitherto has been to accomplish this profitably. Some years ago at works near Swansea large quantities of such ore were treated by calcination; the sulphur evolved during calcining was converted into sulphuric acid, which was subsequently used to dissolve the oxide of zinc contained in the calcined ores (by treating in large tanks). The solution of sulphate of zinc was then evaporated in a reverberatory furnace, and when concentrated to the consistency of syrup, zinc blende in powder was stirred in and the furnace heat raised. This caused a great evolution of sulphurous acid from the mutual decomposition of the sulphide by the sulphate, and resulted in the production of zinc oxide, which was then sold for the production of spelter to zinc smelters in the locality. These works failed, chiefly through the insufficient and varying supply of ores, which required alteration and adaptation for each quality of ore. Other attempts have been made to convert the dissolved zinc into zinc white—a valuable commercial product. By one of the new processes a bold attempt is to be made to produce from the dissolved zinc by electrolysis metallic zinc, and the patentees appear to be sanguine of success, and apparently there is every possibility of this process giving good commercial results. Two companies, each with large capital, have been formed for treating in Australia these ores on different lines, and both of them are likely to prove successful. If so the Broken Hill Mines, where these ores can be raised in vast quantities at very low cost, will be in a position to pay dividends. At this time the carbonate ores at these mines, which have been almost the sole source of profit, are nearly exhausted, but should the new processes prove successful, the dividend-paying life of these mines will be extended for at least one generation. What the effect will be on the prospects of the prices of lead, silver, and spelter can only be a matter for surmise, but it would take some years before sufficient quantity of these metals from this source could be thrown upon the market to produce a large disturbing influence.

BRITISH GUIANA'S GOLD INDUSTRY.

The following is the amount of gold entered at the Custom House, Georgetown, for shipment by the R.M.S. Solent, which left on the 30th ult., and the names of the shippers:—

	Ozs.	dwt.	grs.	Total Value
Colonial Bank	798	19	23	
British Guiana Bank	2182	11	23	

Total... 2981 11 22 ... \$53,076.21

The following are the returns of gold entered at the Department of Mines for the weeks ending:—

	April 25.	May 2.
	Ozs. dwt. grs.	Ozs. dwt. grs.
Barama...	62 8 5	72 8 19
Barima...	283 15 9	383 17 15
Cayuni...	291 4 14	405 18 4
Essequibo...	301 4 3	631 12 2
Groote Creek...	33 5 7	—
Potaro...	198 7 22	193 7 12
Paruni...	8 8 9	88 17 12

Total... 1178 13 21 ... 1716 1 16

Export of gold from January 1 to May 11:—

	Ozs.	dwt.	grs.	Total Value
1896	31,802	15	50	\$566,282
1895	34,916	9	12	\$618,067.92

MINING IN NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

SINCE my last letter, matters in connection with the staple industry of the colony have been of an uneventful character, with the exception of some of the most important gold and bullion producers, with their monthly returns to hand. Outside of that there is nothing that calls for special mention.

At Waihi the general aspect of mining enterprise is quite different to that noticeable in the Thames and Coromandel centres. Here an important discovery has been brought to light in the Union Waihi Gold Mining Company's ground.

A leader has been intersected which is thought to be identical with a lode known as the Amaranth. This quartz body was met with in one of the surface prospecting drives, and from what I can gather from a fair average sample, a return equal to £18 per ton was obtained by assay. It may be mentioned that the Union Waihi property lies to the south-east of the Waihi Gold Mining Company and westward of the Waihi Silverton. It is bounded towards the south-east by the Silverton and Gladstone properties; and occupies a most unique position in the centre of a group of gold-producing properties. However, it must be borne in mind that the strike of the famous Martha reef, which the Waihi Company are operating upon, is not identical with the system trending the Union Company's area; that they are quite a distinct reef system is an established fact, or supposed to be a fact, time and development alone will reveal, whether the Martha reef exists beyond the company's boundary. There is no doubting the fact but that the lode has suffered a great heave, in what direction is not at present known.

Everything in connection with the Waihi Silverton reduction plant is working smoothly, and since crushing was commenced the mill has been kept running continuously. I anticipate healthy returns from this mine, and of that character that must leave a large profit for shareholders. The various developments in the mine are all in active progress, and Mr. Adams, the company's manager, is leaving nothing undone to secure a steady output of milling material to keep the reduction plant fully supplied. It may be worthy of mention that the richest ore ever obtained in the Ohinemuri mining district was mined from the Silverton reef; and the next, as far as I can remember, was from the Adeline reef, in the Karangahake district. This is now the property of the Earl of Glasgow Company. The blue andesite came in, and cut all trace of the shute of gold off, but above this formation 3000 ounces of gold was mined in a very short period. The very same features with reference to the blue andesite occurred in the Waitekauri district; here a lode showing a thickness of 12 feet, and carrying ore worth £28 per ton, became almost worthless, when the blue decomposed andesite came in contact with the lodes.

The Waihi Gold Mining Company's monthly return is again to hand, and, as will be seen, the usual tonnage of ore has not been treated; it is, nevertheless, of a much richer quality—in fact, quite supersedes anything yet obtained in the mine—that is taking the general character of the ore on an average. Considerable delay has been caused, owing to the boilers having to be attended to and repaired; also a shortage of water due to the unprecedented drought necessitating stoppages, consequently the treatment of ore could not be proceeded with. However, during the month they treated 2220 tons of ore, from which they extracted £9208 worth of bullion, the average being the exceptionally high one of a fraction only under £4 3s. per ton. Owing to the want of water an average of 80 stamps only could be run, which, of course, accounts for the quantity of ore treated, being under that which was usual prior to the drought setting in.

Last month 1950 tons of milling material were treated for an extraction of £8602 worth of bullion, with £684 from tailings (which are since exhausted), average per ton £3 7s. 8d. The month prior to that they treated 3060 tons of material, which produced £11,140 worth of bullion, including £2405 from tailings, average value per ton £3 12s. 9d.

Now that the drought has broken up everything is again in working order, and the mine throughout is without change. Excellent progress continues to be made with the various works in connection with the new reduction plant.

Waihi Grand Junction Gold Mining Company.

During the past two weeks operations have been interfered with, occasioned by the erection of poppet heads and other appurtenances in connection with the winding appliances. It appears the pump has not been working as smoothly as is desired. However, a depth of 255 feet has been reached.

Waihi Favona Brilliant Gold Mining Company.

This property was signed over on April 14 to the English Company. It lies to the south-east of the Waihi Silverton, and joins that company on that boundary. It is bounded towards the north-west by the Grand Junction, to the north-east by the Waihi Martha Silverton United Syndicate, a combination of names, and occupies a position which embraces the whole northerly continuation of the combined reef system of the Waihi gold field. Up to the present the chief point of development so far undertaken has been confined to sinking a shaft on the north slope of the Silverton Hill, 15 feet from the Silverton Company's boundary. The shaft has been sunk to a depth of 80 feet through a very good class of andesite; at that depth a level was opened out, and immediately commenced to penetrate quartz. This level has now been driven a distance of 120 feet, and for fully 80 feet of that distance quartz has been passed through, separated by bands of decomposed andesite. Assays taken from this great quartz body (I am informed by Mr. McLean, the company's manager) produced results from 9s. to 32s. 6d. per ton. Of course, its close proximity to the surface, it is needless to remark, the ore body is not a true defined vein, but when opened up at depth I am of an opinion that it will eventually prove to be a junction point of the Silverton and Amaranth lodes, which, judging by their strike, should converge towards this particular point. However, it is the intention to at once proceed with the erection of the necessary machinery, for the future and effective development of the property on a permanent basis, when this great ore body will receive a thorough exploiting at depth, where there will be every facility afforded to ascertain its true strike and value.

Waihi Extended Gold Mining Company.

A reef has been cut in the exploiting level in this company's property, but it cannot possibly be the Martha lode, inasmuch that the property is dead off the line of this famous reef system. It is, however, a lode from 18 inches to 2 feet in thickness, carries a small percentage of bullion, and will require further development to test its value. It may be mentioned that the property lies to the north and west of the Waihi Gold Mining Company, and joins that company on that boundary. Large areas of ground are being pegged out for mining purposes in this district, extending for miles in length; but I am afraid a great extent of it is useless for the purpose for which it is being taken up.

Waitekauri District.

The Waitekauri Gold Mining Company have again cleaned up for the month. For the four weeks ending March 28 they reduced 136 tons of ore, which produced 674 ounces of bullion, worth £668 16s. 6d., or an average of a trifle over £4 18s. 4d. per ton. This, it must be borne in mind, was won from the Golden Cross section and the company's primitive plant of 10 stamps only. The works in and about the mine are proceeding, whilst that of erecting the new reduction plant is being pushed ahead with all possible speed.

Waitekauri Cross.

This company are at present confining their developments to the extension of a low level crosscut to intersect the Waitekauri Company's reef. Of course, this will take some time to accomplish.

The Waitekauri Extended Gold Mining Company have commenced vigorously developing their property; they cannot possibly get the Waitekauri reef, but have got other gold-bearing lodes trending through their section, which may with development prove to be payable at depth, but judging from the lodes that I inspected on the surface some time back, I can safely say that, at that point of development, they were not of much value to a company like this; the lodes were small in size and of an exceptionally low grade. However, as the developments proceed, there is a reasonable probability that new discoveries may be brought to light.

Komati District.

This section of reef country lies to the north-west of the Waitekauri belt of reef, and is totally a distinct system to that on the latter district. Here within the last day or so the Komati Reefs Gold Mining Company have intersected the Argall lode at a point about 200 feet north of the main crosscut; its actual dimensions are not as yet known, but that it is a large body is undoubted—for instance, it has been penetrated for a width of 10 feet (at the time of writing) without sign of the footwall.

It will be seen that the possibilities of this lode are immense, for as far as can be ascertained the lode produces splendid dish prospects, and when once a dish prospect is obtainable, the ore will, without fail, give high assay results, some of which have been taken away for treatment, but are not as yet to hand. I am, however, very sanguine as to the result being of a highly satisfactory nature.

Good progress is being made with the plant and other appliances.

Whangamata District.

Large areas continue to be taken up here, but nothing further has been brought to light. The development of the Golden Mount reef reveals an ore body fully 20 feet in thickness, worth between £3 to £5 per ton.

Tauva District.

There is nothing of importance to chronicle from here, with the exception that Mr. Jonathan Seaver, mining expert, has visited the property known as the Broken Hills special claim, with a view to its purchase. At this mine, it will be remembered, a ton of ore was broken out which produced bullion to the value of £80 per ton with the Thames School of Mines experimental plant.

If Mr. Seaver secures this property he will acquire a section of country 320 acres in extent, all new and untried, highly auriferous; but the formation, or ore deposit, is of a very peculiar formation, still rich ore exists, and apparently in large quantities. The water supply for motive power is unsurpassed, and never failing.

Coromandel District.

The most important mine in this part of the island is the Hauraki Gold Mining Company. The March return to hand shows that the treatment of 380 tons of ore produced 2119 ounces 16 dwts. of gold, valued at £3 per ounce, total value about £6359 8s., the average per ton being over 5 ounces 11 dwts. 13 grains. With reference to this part of our gold fields, there is no denying the fact but what there has been some very rich patches of gold won from various parts of the field, and the one now being operated upon in the Hauraki Company's ground is one of exceptional richness. We will have to wait for further explorations, no doubt, about the rich quality of the ore. Still, there is apparently no great extent of the runs; they are entirely too narrow to be of any consequence to large capitalised companies like those now operating in Coromandel, and unless something of a permanent character is brought to light, some of the probable chance companies will have to take a back seat. Rather too many companies have been floated on mere line of reef prospect, and because a property is situated on the line of reef, that does not say that it is a legitimate investment to offer for safe investments. Flotation on reports from unqualified men, backed up by high falutin on the part of others, has been the means of procuring capital for a number of worthless areas. To my knowledge would-be experts have been sent here to report on the auriferous character of our lodes, when they know no more about it than the little waif on the streets. This class of gentry are almost certain to do harm to the industry in time, and until absolutely genuine reports are furnished on properties offered for flotation, poor and worthless lands will be acquired by the inexperienced mining speculator, which must ultimately result in disgust.

Kuaotunu Gold Field.

A great amount of exploring work is being prosecuted in this district, and, on the whole, some of the mines look very well, whilst very fair returns continue to come to hand. The ore-bodies here are of much larger dimensions than those on the Coromandel side of the range, although of a lower grade, they are more consistent and general in grade.

Thames Proper.

Here several companies are operating with invariable success. To advance this section of mining, capital is required to extend the developments down below the water levels, where the various lodes have been worked with highly satisfactory results. The Thames Hauraki (late Queen of Beauty) Gold Company is at last established, and the required capital fully subscribed. A Mr. Haggard, accompanied by Mr. Harris, arrived here last week for the purpose of inspecting the property, and taking it over on behalf of the company.

Tenders have been called for stripping, enlarging, and timbering the shaft down to the 400 feet level; when this is completed a further depth will be proceeded with.

It may be mentioned that the company's property is situated in the centre of the Thames gold field, and occupies a position where the most important gold-bearing lodes traverse through the whole length of the area. It embraces the very best section of propylite of a gold-bearing character at depth. This has been proved down to the No. 11 level, or at a depth of 748 feet from the surface; at that depth the gold-bearing propylite or kindly country exists, much the same in character as that met with in the higher levels. There are two main lodes in this gold-bearing propylite known as the Nos. 1 and 2. In their strike downwards they are almost vertical, but still No. 1 underlies to the east about 78°, whilst No. 2 dips to the north-west slightly, the result of this being that they meet on the beach side of the shaft at the No. 4 level. Here they become asso-

ciated with one another, and strike below this level as one body, keeping the south-east underlie, as is noticeable at the No. 1 level. The average width of No. 1 reef is fully 5 feet, and of No. 2 10 feet in thickness. The latter quartz body, however, thickens out to a width of 18 feet. Payable ore was met with down to the very lowest point at the No. 11 level, or at a depth of 748 feet. These lodes have been operated upon both east and west of the shaft. Seward they have been traced to the beach side, and eastward they have been worked for hundreds of feet by the City of London and May Queen Companies, and in all of these they have proved highly remunerative.

In the Parko and Bird-in-Hand sections of the company's property large lodes have been mined with payable results, but in every instance the development work ceased just at the period when the work should have been continued. One large lode in this company's area which is well worthy of special mention is the Vanguard reef. This reef was first discovered in the south crosscut from the 400 feet level, from the Parko shaft. It was opened out for a distance of 100 feet, and proved to be a well-defined lode, maintaining an average thickness of 8 feet at this point of development. The quartz is of a hard nature, but charged with pyrites, being the very best indicator of gold in this centre. When intersected at the No. 8 level the lode proved to be of much larger dimensions, being fully 12 feet thick, dipping to the south-east at very high angles, and carrying a fair percentage of precious metal, which should pay if worked with a better system of development than has been displayed in the past. Now that the present scientific treatment of gold ores has obtained a sound footing in this part, there is a reasonable chance that by adopting the new system the Vanguard reef will prove to be a grand acquisition to this company, inasmuch as it is wholly intact and unexplored for thousands of feet; this is saying a lot, still I feel certain that this lode will eventually prove to be one of our most productive gold producers under operation. Its strike is well within the gold-bearing propylite, or kindly country, which is one of the most important features in connection with gold mining on the Thames, for without the right class of country no gold need be looked for. It must be borne in mind that the past work in this mine has been of great magnitude, and to mark how immensely productive they were, I have taken the trouble to hunt up the bank purchasers of gold from the company during the period they were in vigorous operation. I find that dividends to the amount £367,973 was paid to shareholders, while during that period the Bank of New Zealand purchased 137,887 ounces, value £367,973; other banks may have bought also, but the above is the Bank of New Zealand purchases. It is needless to say that the English investors have secured a property that is wholly intact on the strike of the gold-bearing reefs below the No. 11 level in the Queen of Beauty section, whilst the Deep Sink and Great Northern sections are all new and untried sections of country, especially where the numerous lodes trend into the areas mentioned. The lodes striking through the south-east part and centre of the mine are rather too numerous to particularise, and I am very sanguine that, once the company extend their developments to the south part of their property and below the No. 11 level, ore of a highly payable character will be met with.

Monatairi Gold.

This mine is being thoroughly and systematically developed. Splendid progress continues to be effected with the various works in hand, and very fair results are being met, especially on the level known as the 100 feet level. Here the specimen ore, which was obtained from the Ruben pair reef, is of very fair quality. 135 lbs. of this ore produced 207 ounces of gold, whilst the 93 tons of general quartz only yielded 50 ounces. Still, as both results were won from the same lode and at the same point of development, the approximate value cannot be considered otherwise than highly satisfactory. It will be seen that the 93 tons and 135 lbs. of specimen ore produced 257 ounces, whilst the total returns from all parts of the mine is 459 ounces, value £2 12s. 11d. per ounce, total value £1214 8s. 9d. There is a reasonable prospect of these returns being maintained, whilst there is also a possibility of a new discovery being met with in any of the exploiting works in progress.

I may add that, upon looking up past returns, that the New Whau Gold Mining Company have in the past produced 22,500 ounces of gold, valued at about £58,000. This property is, I believe, under offer to English investors, and as there is a large extent of unprospected area, it should be worthy of attention, especially when the above returns have been won from different parts of the mine. It lies between the Monatairi Gold and the Alburnia; it embraces all the latter system of lodes, but none of the former.

Messrs. Park and Gordon, two of New Zealand's cleverest and most scientific experts, have relinquished their Government situations, and assumed their new duties as advisers to the Anglo-Continental Syndicate, their headquarters will be in Auckland; from that centre they can visit the whole of the gold fields, and keep in touch with all new discoveries. The New Zealand Government are looking about for scientific men to fill their respective positions, and it is questionable if they will secure the services of such faithful servants as Messrs. Park and Gordon have proved.

Brunnerton Coal Mine Disaster.

Not one single miner lives to tell the tale of this unfortunate catastrophe. However, the whole colony, both here and in Australia, have liberally subscribed for the relief of the poor widows and orphans; some 60 miners lost their lives, and the widows are left with very large families.

Tararu Mines Gold Mining Company.

The various works in this mine are all actively progressing, and the extent of payable ground being systematically developed must eventually lead to good results. Since commencing work on behalf of the English investors, very poor success has been achieved as regards the treatment of the company's refractory ores, which contain gold of that fine character that the present appliances for treating fails to extract more than 20 per cent. of the assay value of the ore. Of course, the whole of the tailings are being saved and carefully stacked with a view to their future treatment by some other method to that now in vogue. The management are fully aware of the inadequate appliances for the treatment, and have instituted experiments to (if possible) ascertain the best mode of treatment. After carefully executing a series of tests, cyaniding the ores has been decided upon, and now the required appliances are rapidly approaching completion. In all probability the whole plant will be in readiness in about six weeks' time to commence the treatment, which I am sanguine will be a vast improvement on the out-of-date method.

The return for the month of March has come to hand, and notwithstanding the fact that we have passed through a long period of dry weather, which necessitated cessation of work as far as crushing was concerned; but latterly the weather has broken, thus enabling this company to commence crushing for the period mentioned. They treated 200 tons of general quartz, which produced 93 ounces 13 dwts. melted gold, at 65s. per ounce; total value, about £300. The saving in this instance is again not more than 20 per cent. The mine is looking well, and

there are works now well in hand which will eventually relieve the company of some heavy expense. I refer to the Sunbeam low level, which will directly connect the mine and workings with the reduction plant, and dispense with the carting of the ore, which is an exceptionally high item for any company to contend with. This level has been advanced a distance of 1440 feet with no sign of the solid face. It must be borne in mind that this level was originally driven by the former owners, for what distance is not as yet known. However, it is well forward to the point where a connection can very easily be effected, resulting in the accomplishment of a very important piece of economical work for this company. The City of Dunedin level has been advanced from the north part of the mine a distance of 477 feet, with a view to connect with the above-mentioned level. Once this work is finished, then the mine will be advanced to that stage, that a steady and continuous supply of ore for treatment will be available.

The bulk return of gold for the month from mail to mail from the principle mines is £26,160, as against £24,643 last month. This, it must be borne in mind, does not include a number of smaller returns and trial crushings.

Herewith you will find a correct table of the gold and bullion returns from the different mines in the various centres.

The following table will show the gold returns for the month of March from the various districts:—

May Queen (Thames) crushed 405 tons and 100 lbs. of picked stone for a yield of 299 ounces 10 dwts., value ..	£ 846 1 9
Victoria (Thames) treated 78 loads quartz, 100 lbs. of picked stone, yield 175 ounces, value ..	498 15 0
Monatairi Gold (Thames) crushed 541 tons general quartz and 230 lbs. specimen ore for a yield of 459 ounces, value ..	1,214 0 0
Waiohiki Gold Mining Company treated 196 tons of ore for a yield of 203 ounces of gold, value ..	553 2 6
Waitekauri reduced 136 tons of ore for an extraction of bullion worth ..	668 16 6
Waikato Gold Mining Company treated 2220 tons for a yield of bullion (not running full time) valued at ..	9,208 0 0
New Zealand Crown treated 486 tons, total value ..	2,120 0 0
Woodstock United treated 272 tons quartz for a yield of bullion valued at ..	1,149 0 0
Kapiti Vermont treated 330 tons of general ore for a yield of 473 ounces gold.	
Ty Fiske treatment of ore produced 216 ounces 16 dwts.	
Hauraki Coromandel crushed 380 tons, yield 2119 ounces 16 dwts. ..	6,359 0 0
Tararua Mines crushed 200 tons material, value about (saving of not more than 20 per cent.) ..	300 0 0
Cambria crushed 16 tons for 14 ounces, value ..	47 4 9

Just before closing my letter cables have been received that the Alburnia property has been successfully floated on the London market, and also that Mr. Moss Davis, on behalf of English capitalists, has deposited £2000 with a six weeks' option to float or negotiate the sale on behalf of the New Zealand shareholders.—The May Queen Gold Mining Company. Any syndicate that should be fortunate enough to get hold of this group will, I feel certain, have no cause to regret their venture; it is, without exception, one of the best situated areas on the Thames gold fields.

CROCUS NORTH NO. 1, LIMITED.

It will doubtless be in the recollection of our readers that at the general meeting of the Central Exploration Company of West Australia, held last March, the Chairman made most favourable reference to the prospects of the Crocus North No. 1 Block. As a consequence, the company has now decided to form a company to work this property, and in accordance with the wishes of the shareholders of the parent concern, the first right is given to them of subscribing for shares. The capital of the new company is a moderate one—namely, £50,000, in shares of £1 each. The mine is situated in the famous Hannan's district on the direct line of the reef, we are informed, bearing north-west and south-east, which traverses Crocus South United, Hannan's True Blue, and Brownhill. It will thus be seen that the property is surrounded by well-known and valuable gold mines, which bears a favourable testimony to its prospects. The area of the property is 9 acres. The mine has been inspected and reported upon by the following mining engineers:—Mr. W. H. Matthews, Samuel Gifford, Nicholas Holman, and others. From their reports it appears that the main reef is proved by an inclined shaft, which has been sunk to a depth of 136 feet, the lode having been followed down from the surface, and carrying gold nearly all the way. From the bottom of the shaft a level has been driven 320 feet of north for a distance of 116 feet. A crosscut put out to the west of this level cuts the reef, and shows its total width to be 34 feet. About 5 feet in width of the lode assayed 5 to 11 ounces, and the remainder of the width 1 to 5 ounces to the ton. The rock throughout the whole of the crosscut to the end is said to be gold-bearing. The distance on the line of the reef between the two shafts, in both of which the lode has been proved, is 220 feet, and, calculating its run with as fair accuracy as circumstances permit, it is believed that about 93 chains of this reef are in the property. The first 10 stamp battery has been already shipped, and shareholders, therefore, can look forward to crushing at an early date. A vertical main shaft is being sunk in a position well suited for the systematic development of the mine, and it is intended to continue it to a depth of 200 feet or more to the water level. In a letter from the manager of the mine, dated February 29 last, it is stated that this shaft has been carried down 114 feet, that the main reef has been intersected by it at a depth of 80 feet, and that the shaft was still being sunk through the lode. Attention is now being given to determining the exact position of the noted Green lode. With this object a shaft has been sunk to the depth of 60 feet, and from the bottom of it a drive has been started east, which has cut what is believed to be the hanging wall of the lode, as the rock is very similar to that covering the Green lode, where it is being worked in the adjoining mine, in a shaft distant only about 60 yards from the boundary of Crocus North No. 1. Since the bearing of the reef is in a direction taking it straight to the point reached by the drive referred to, there can be little doubt that the position of the Green lode is thus fixed.

An important security for the investment of capital by trustees and others will be offered at the mart next Friday, when the freehold ground rent of £1100 per annum secured upon the freehold premises, No. 10, Cornhill, facing the Bank of England, will be submitted for sale by auction, with reversion to the rack rents arising from the property in 39 years. Messrs. Green and Son, 25, Abchurch-lane, are the auctioneers.

MEETINGS OF MINING COMPANIES.

POLBERRO MINE COMPANY.

An ordinary general meeting of the shareholders in the Polberro Mine Company was held on Thursday, at 37, Walbrook, E.C., Mr. JOHN B. REYNOLDS presiding, to consider the recommendation of the committee as to certain works to be carried out in the immediate future, and to decide upon the same.

The SECRETARY read the notice convening the meeting, and also the following report from Captain John Harper:—

Polberro Mine, St. Agnes, Scourie, Cornwall, May 27, 1895.

TO THE SHAREHOLDERS.—Since your last general meeting, held on the 13th of last month, the 50 fathom level east has been driven 3 fathoms, and the lode has improved considerably, being now worth £8 per fathom, with every probability of a further improvement in the near future. Some delay has been caused in working at this point by the fixing of larger pitwork to cope with the additional water but the end will now be driven east as fast as possible by a full party of men. Acting under instructions received from the committee I have entered into a contract with Mr. McCulloch to sink the engine shaft 12 fathoms deeper with two rock drills for the sum of £251. When this contract is completed we shall drive from the bottom of the shaft east on the course of the lode, and a rich course of tin might be found at any moment, as large profits were made from tin raised at the 50 fathom level on the same lode at a point about 60 fathoms further east.—I am, Gentlemen, your obedient servant, JOHN HARPER.

The following report was also laid before the shareholders:—

St. Agnes, Cornwall, April 23, 1895.

JOHN B. REYNOLDS, Esq.

SIR.—I have this day been underground at Polberro Mine, and thoroughly examined the 50 fathom level east on the Pink lode, and found a small crosscut 14 fathoms from the shaft from which a large quantity of water is flowing. This will in no way impede the progress of operations, as the pumping engine is quite capable of dealing with it and much more. This influx of water must be regarded as a good indication of an early improvement. With regard to the lode in the end beyond the crosscut I have the pleasure to state that it is well defined, 4 feet wide, and contains tin ore, two samples of which I took and assayed. One produced 35 lbs. and the other 44 lbs. of tin to the ton of stuff. I advise that this end be prosecuted vigorously, feeling confident that a rich course of tin will soon be met with. By sinking the shaft 12 or 13 fathoms deeper to intersect the junction of the South House lode with the Pink lode another level might be driven east as far as to open up an extensive and permanent mine.—I am, yours obediently, JOHN WILLIAMS, Manager, West Kitty Mine.

N.B.—I have this day again visited the mine, and find that the lode in the 50 fathom level has improved since the 23rd ult., which confirms my previous view of the importance of driving east. The course to be pursued is very clear to me—viz.: Sink the shaft 12 fathoms deeper, and drive east on the course of the lode from the bottom, and also at the 50.—J. W., May 14, 1895.

The CHAIRMAN said: Gentlemen—This meeting has been called in pursuance of one of the resolutions passed at the last meeting of the shareholders, and I do not think I have anything to add to the circular which has been sent out to you. I think you have there very explicit and full information, and the exact position of affairs as they at present stand. The committee held, as I think I indicated in the circular, a very prolonged consultation, and they were unanimous in the decision at which they arrived. I was very careful to get the most positive declarations as to the future prospects—I mean as to our immediate prospects—and those explicit declarations were in every respect satisfactory. I have pleasure in saying to the shareholders that I have never known in all my experience a mine with such positive indications as we have at present and for the immediate future. I will not detain you longer, because Mr. Strauss is present, and he will be good enough, I am sure, to address us on the question of the price of tin, which to us, after all, is the vital question at present. (Hear, hear.) We are more concerned with the price of tin than we are with our property, because I do not think there can be any doubt as to the Polberro Mine itself. But we shall be very glad when we can sell our produce at a remunerative figure. Perhaps it will be in order if I now, without anticipating the decision of the shareholders, move the resolution, which is as follows:—"That the recommendation of the committee to sink the engine shaft immediately to the 62 with two rock drills, and crosscut to the Pink lode at that level, whilst at the same time pushing on the 50 with all dispatch, be and is hereby adopted."

Mr. A. STRAUSS, M.P., said: I have very much pleasure in seconding this resolution. I must say I am rather taken a little by surprise, because I did not know what the exact resolution to be proposed was, but at the same time I may say at once that I fully agree with the plan which you are asked to adopt, as by so doing you will push on with all speed to the point where we have every reason to hope good tin will be found. I think the contract which we have entered into with Mr. McCulloch is very favourable, and I hope that in the time specified, three months, I believe—

The CHAIRMAN: No, six weeks.

Mr. STRAUSS: Well, I believe that by that time the result we anticipate will be obtained. I can quite understand how important it is that we should know what price we may get for our produce. Naturally, if we had any reason to fear that the price of tin would go down further it would perhaps be, in the opinion of some shareholders, imprudent to incur this extra cost. I have, however, no hesitation in giving it as my opinion that there is not the least fear that the price of tin will go down further, for the simple reason that we have reached that point where, to say the least of it, the production and consumption are on a level. Now, it is my opinion that unless very extraordinary circumstances occur, looking at the present state of things, there is certainly no reason for anticipating a further fall. The price of £60 for foreign tin is so low that it really discounts any unfavourable feature which might turn up, and as we do not anticipate any unfavourable feature, the price is so abnormally low that we may expect a rebound within a measurable space of time. I believe I addressed the meeting a few weeks ago, and I do not want to repeat myself, but what I did impress upon the shareholders then was this—that the cost of raising tin in the Straits Settlements had considerably increased, and we might anticipate some trouble among the miners there. This anticipation has been fully confirmed; numbers of failures have taken place in the East, and many of the smaller mines have shut up already. I have also received information within the last two days that the very largest mine in the Straits is on the point of shutting up, and although I never like to be too sanguine, I think I am quite within the mark in affirming that the production there will not only not increase any further, but will actually decrease. Combining this with the fact that the consumption is increasing, that trade in all metals is improving all over the world, that the consumption of every metal—copper, lead, tin, &c.—is making enormous strides, owing to the improvement in trade, I think it does not require much explanation to show you that it becomes an absolute certainty now that there will be an upward grade in the price, and that no further downward grade will take place. Of course, we have to contend with the big accumulations which are held in London and elsewhere, and it must take a little time to absorb that stock, but it is my firm conviction that by the time we are able to get out the tin which we hope to find—of course, nobody can look through the ground, and mining is always a speculation, but I myself have not the least doubt that we shall find the tin there—we shall, in all human probability, get a better price for our produce. As the Chairman put it, the price of tin is of the greatest importance to the St. Agnes district—in fact, to all Cornwall, because we know the cost of production is pretty high—£40 for black tin and £60 for foreign leaves hardly any profit. If we get only an advance of £10 or £15 owing to the economies introduced into the cost of raising the tin we should be able to make a profit, and I am convinced from what I know of this particular mine that such an advance on black tin would certainly give us such a price as would leave us with a profit. I, therefore, have all the greater pleasure in recommending this resolution, as I feel that it would be very unwise if we did not do the work as fast as we possibly can. With the prospects of a better price for tin, it would be suicidal if we did not follow the recommendation embodied in the resolution. Under these circumstances I hope the shareholders present will accept it with acclamation.

tion, and I hope our outlay, our patience, and our trouble will be ultimately rewarded, firstly and chiefly, by finding the tin; and, secondly, by obtaining such prices for it as will leave us with a fair and remunerative profit. (Applause.)

The CHAIRMAN: When Captain Williams's report was issued, I sent a copy of it to some of our friends, who took an exceptional interest in the property, and amongst them was Mr. Glass, who is a practical man, and, perhaps, he will be kind enough to say what he thinks about the proposition.

Mr. GLASS: When I received the report I wrote the Chairman that in my opinion the work ought to be done at once. It is no use keeping the mine open if we are not, in view of the prospects held out, going to work it energetically, and I think the whole of the shareholders will be pleased to accept the recommendation of the committee. Men who have been miners in Cornwall from their boyhood to their old age, and know the ground well, say that if the mine was further developed they are sure it would prove a good one. (Applause.)

Mr. WRIGHT: May I ask one question, and that is—Why do you call the new ground the Pink lode? Is it a lode seen in any other mine, and continues in ours? Then, again, I would ask Mr. Strauss if it is a fact that there is more waste in tin than in any other metal, seeing that it is used for coating more than anything else.

Mr. STRAUSS: There is no waste in tin from the moment it reaches the manufacturers. It is far too expensive to separate the tin when it is considered that in old boxes of tin plates, which weigh 1 cwt., and contain 220 sheets, only 2 lbs. to 3 lbs. of tin are used.

Mr. WRIGHT: Then it is waste?

Mr. STRAUSS: Well, it can never be used again.

The CHAIRMAN: With regard to the christening of the lode as the Pink lode, I have no doubt that it was so named by way of sentiment when it was found to be exceedingly rich, that being a favourite word of some of the shareholders who are interested in the mine. The lode is, in fact, the Champion lode of the district, or, at any rate, it was so considered before the celebrated West Kitty lode was fully developed. The profits derived from the Pink lode in the St. Agnes district have been enormous, and, as the report says, some 60 fathoms to the east, at a shallow level, the profits made were large. These are reasons why we are so tenacious in going for the lode. We have something very positive to guide us, and we have no reason whatever to doubt that the Pink lode will give us as much profit as it gave the other companies that have developed it. Our mine joins the Penhalls, and our area is one mile in length. It would be difficult to say what breadth we have on the lode, but when you consider that we have one mile on the course of the lode you can judge for yourselves that our prospects must be of a wonderful description. You will probably find when we get down to the 62 fathom level—and we shall be there in six weeks—and have crosscut a short distance, that we shall cut the Pink lode at that level. It is practically certain that we shall be very near the lode when we reach the 62 fathom level and possibly we may cut it in the shaft.

Mr. JACOB, who represented the holders of a large number of shares, said he was very pleased with the proposal.

Mr. FIELD: Are we still getting tin from the present workings? The CHAIRMAN: There is a small parcel at present being prepared for market as we must clear out the floors. In regard to machinery, we hope to be able to pay for the new stamp, which will be required out of the produce of the mine. Our position is at present very similar to that of West Kitty just previous to when they cut their enormously rich lode.

Mr. GLASS thought when they cut the Pink lode that the stamps should be immediately erected before a great quantity of tin was taken out.

The resolution was then put and carried unanimously.

Replying to Mr. FIELD, the CHAIRMAN said at the present moment the company's accounts were about square. The shilling call would not be made until the next meeting.

Mr. STRAUSS proposed a vote of thanks to the Chairman, and said Mr. Reynolds took as much care of the shareholders' interests as though they were his own.

Mr. JACOB seconded the motion, and it was agreed to by acclamation.

The CHAIRMAN, in reply, said he had a larger interest in the mine than anybody else, and he need hardly say that he looked after the shareholders' interest just as if he were a paid agent, although he had never had a penny from the company since it was started. The committee and himself rendered their services quite gratuitously.

The proceedings then terminated.

UNITED AUSTRALIAN EXPLORATION, LIMITED.

An extraordinary general meeting of the shareholders in the United Australian Exploration (Limited) was held on Wednesday, at the Cannon-street Hotel, Mr. PERCY TARBUTT presiding, for the purpose of making certain alterations in the Articles of Association.

The SECRETARY, pro tem. (Mr. G. G. Walker), read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—Before going into the business of this extraordinary general meeting I shall take the opportunity of making a few remarks as to what has been done since the formation of the company. As you know, this is also the statutory meeting, at which there is generally nothing more to report than the registration of the company and the subscriptions received, but we have proceeded rather more quickly. The company was registered on January 28 with a capital of £1,000,000. We have issued no prospectus, the subscriptions having been made amongst private individuals who knew the board, and employees of the company. Well, 247,775 shares have been issued, some of the most recent of which have been issued at a premium. The object of the company is to, first of all, establish first-rate offices and scientific gentlemen, connected with mining in different colonies, and able to obtain the very best information. They will also report for other companies for which we shall receive fees. Another object is to acquire interests in properties on which these gentlemen have reported to us, and to form companies to work those properties. We have obtained as our chief engineer Mr. A. S. Boucher, who was for some considerable time chief superintendent to the Consolidated Gold Fields of South Africa. He was also for some years my partner, and I know him to be one of the best English engineers available. With him is Mr. John Smith Low, the late business manager to Messrs. Fraser and Chalmers, the great mining machinery makers, and his assistance in the matter of crushing machinery and pumps will be of the greatest use. Then we have engaged Mr. Frank Robinson, a man of large experience in the North of England as a mining engineer, more especially in regard to mining machinery. Messrs. Low and Robinson went straight out to New South Wales, where they are fully occupied in reporting upon and examining properties for other people, for which work we shall receive fees. Mr. Boucher had first to go to the Cape, but he is now on his way to Sydney, where he will arrive in about a week. We are also making arrangements for Mr. Boucher to visit and report upon properties. In addition, we have obtained the option of several promising mines in New South Wales, the purchase of which is subject entirely to the report of Mr. Boucher and Mr. Low. Our original intention was to start operations in New Zealand, but we were able to make arrangements with another company who have a most excellent staff in that colony, by which we shall participate in all the business they do, so we thought it best to confine ourselves to New South Wales. As regards Western Australia, we have engaged Mr. Hugh Walker, who was engineer and manager to the Glasgow Merchant Development Company, whose assets we have taken over. This company had the right to purchase several large blocks of properties and also considerable blocks of shares in companies already floated. One of these blocks we have already formed into a company,

called the Woodley Reward, with a capital of 250,000. The whole of the working capital has been subscribed. Another promising property, which forms part of the assets of this company, is situated in the Mount Magnet district, and this we are about to also form into a company of half shares with the West Australian Exploration Company (Limited). Both these properties are most favourably reported upon by Mr. Moreing, of Messrs. Bewick and Moreing, on whose recommendation principally we have gone into the business. We are acquiring, I may also say, other options, subject to our own examination of the properties being satisfactory. In New Zealand we have acquired a considerable interest in the Moanatairi Mine, which is the largest in the Thames district. It has been most favourably reported upon by the engineers of the New Zealand Company, with whom we have entered into the partnership I have previously explained. We have other projects in different parts of the world under consideration, but nothing of a sufficiently definite character to trouble you with at present. I think these are all the remarks I have to make. We have made an early start, and I think with the best technical advice at our disposal we may look forward to making our undertaking a success. I now beg to propose the following resolution:—“(a) That the Articles of Association be altered in manner following:—“(a) In Article 92 the word ‘seven’ in the third line thereof shall be struck out and the word ‘ten’ shall be substituted therefor. (b) The following articles shall be inserted after Article 128:—128A. The company may cause to be kept in any colony in Australasia in which it transacts business a branch register of members resident in such colony, and the directors may from time to time appoint an authority in such colony, in which such branch register is kept, to approve of or reject transfers, and to direct the registration of approved transfers in the branch register of such colony, and every such authority may in respect of transfers or other entries proposed to be registered in the branch register, for which such authority is appointed, exercise all the powers of the directors in the same manner, and to the same extent and effect, as if the directors themselves were actually present in the colony and exercised the same. 128B. Subject to the provisions of the Companies (Colonial Register) Act, 1883, and to the foregoing provisions, the directors may from time to time make such provisions as they think fit respecting the keeping of such branch register.”

Major RICHARD SEAYER seconded the resolution. Mr. TURNER asked whether there was any likelihood of there being a further issue of the capital of the company, and if so whether the shareholders would have the first offer. He also wanted to know when the next call would be made.

The CHAIRMAN said at present the board did not intend to increase the capital beyond a quarter of a million, but if a further issue were made he thought the directors should, in view of the large premium the shares might go to, be allowed to use their own discretion as to whether the present shareholders should have the first offer or not. In regard to making another call at present, they did not require additional money, and would not, they believed, for some time to come.

The resolution was carried unanimously, and the meeting terminated.

BAMBOO QUEEN AND REWARD MINES, LIMITED.

The statutory general meeting of shareholders in the Bamboo Queen and Reward Mines (Limited) was held on Wednesday, at Winchester House, Old Broad-street, under the presidency of Mr. SINGLATER MACLEAY (the Chairman of the company).

The SECRETARY (Mr. Charles W. Grimwade) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—This, as you know, is the statutory meeting, which we are obliged to hold within four months of the incorporation of the company, and there is really very little to tell you beyond what you have already seen in the prospectus. I think I can congratulate you on having a very good property. Of course, the mines want a great deal of working and development to prove them, but I think you will see now that the West Australian gold fields generally are not just a flash in the pan, but that they contain good, solid, workable reefs, as I think the present price of many of the shares shows. Our property is situated in the Pilbarra gold fields, which, from all I have heard, are as good as anything at Menzies or Hannan's, or anywhere else in the whole of West Australia. Perhaps they are a little further off than some other places, and, therefore, a little longer time must elapse before we can show the results we anticipate. The company, as you know, possesses three properties, and these have all been handed over to us, the total area being 41 acres. Your directors have spent considerable time in negotiating for the engagement of a competent and thoroughly reliable manager, and are pleased to report that they have secured the services of Mr. William Straughan, who is very well known in the Charters Towers gold fields in Queensland. I may say there is a gentleman in the room—Mr. Stirling—who knows Mr. Straughan personally. He has a very great reputation, and owing to the scarcity of really competent miners in Bamboo Creek, your directors commissioned Mr. Straughan to engage and bring with him a number of men; by this means it is hoped to secure better results in many directions. The late manager of the Pilbarra Gold Fields (Limited) wrote under date January 14, 1896, that the mines had been shut down during the Christmas holidays, and the directors are now awaiting a full and detailed report on the position of all matters from Mr. Wm. Straughan. The latest report from the late manager is dated December 12, 1895, wherein he says that he has over 200 tons of fair grade ore at grass on the Queen, and 150 tons on the Reward. He adds, referring to the Reward:—“I have a great opinion of this mine for the future, although we have nothing extra at present.” The Queen Extended and the adjoining claim were only recently acquired, previous to the transfer of this company, but developments thereon are being pushed forward with all speed. I think there is no doubt about the permanence in depth of these reefs, but, of course, it has to be proved. There is one question that has often cropped up in connection with West Australian mines, and that is the question of water. In this case, I am glad to say, we have an ample supply of water, and from all I can gather, the mines are easily worked; and I think if you give us a little time we shall be able to prove to you that this property is one of the best in West Australia. I ought to mention that we telegraphed out to get Mr. Straughan to give us the latest information for this meeting; but, unfortunately, the local wires at Pilbarra have broken, and, therefore, no further particulars have come to hand.

Mr. STIRLING said: Gentlemen—I do not know that, as solicitor to this company, I ought to say very much about the management, but I may inform the meeting that when the board was looking for a manager I happened to meet with Mr. E. D. Miles in London, who is very well known in Charters Towers, and doubtless to many present. He manages half the mines in Charters Towers. I asked him whether it was possible to find a good man who would be willing to go to West Australia and take charge of this company's property. Mr. Miles told me that Mr. Wm. Straughan had just come back from the Straits Settlements. Well, I had known Mr. Straughan some 15 years. In 1886 he was managing the Day Dawn Block and Wyndham, and he left that company with the very highest reputation; the shares at the time were standing at £2 10s. He was engaged to manage a mine on the Etheridge field when I stayed with him in 1888. Having remained there for some time, he went to the Straits Settlements, where he has managed the mines directed by Mr. Pontifex, and, I may say, there is no man in Australia who has a higher reputation for honesty, straightforwardness, and capacity than Mr. Straughan. He is not a fancy manager, who writes beautiful reports and makes very pretty drawings, but he is a thoroughly practical man, who has been in charge of some of the largest mines in Australia, having had charge of both money and mining departments of those mines for the last 20 years; and I think the company can be sincerely congratulated on having secured his services. Mr. Straughan was in New Zealand when I telegraphed to him, and he went straight off to Bamboo Creek. Unfortunately, two days before he arrived on the gold fields his

wife died, and this so upset him that he was unable to write by the last mail, and, therefore, until the next mail arrives, some 10 days hence, we shall not know what Mr. Straughan's views are as to the permanency and value of the reefs in this company's property. I am satisfied, however, that whatever report is made by Mr. Straughan will be thoroughly straightforward, and will be based upon judgment and experience. (Applause.) The proceedings then terminated.

PROSPECTORS' ASSOCIATION, LIMITED.

An extraordinary general meeting of the shareholders in the Prospectors' Association (Limited) was held at Winchester House, E.C., on Wednesday, Mr. C. E. Hogg (the Chairman of the company) presiding.

The SECRETARY (Mr. B. R. Harris) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—The object of calling you together is to pass the resolutions referred to in the notice convening the meeting, and also to give your directors an opportunity of continuing the practice that they have established of keeping in touch with their shareholders, and as far as possible at all times obtaining their support, concurrence, and advice. I may say that since we last met, and, in fact, since this company was formed, we may claim to have met with uniform and continuous success. (Hear, hear.) I think, too—and I hope you will agree with me—that the efforts of your directors have been in a direction distinctly beneficial to all your interests. (Applause.) At the last meeting, as you are aware, I was able to announce to you a very large and very handsome dividend. That was a remarkable dividend on so small a capital and in so brief a period. On this occasion we meet to ask your sanction to the increase of the capital by a sum of £10,000 by the issue of 10,000 ordinary shares. Your directors took what you all conceive to be the very proper course of giving their shareholders the very first opportunity to subscribe for the whole of those shares, and unless those shares are not subscribed for by the shareholders no appeal whatever would be made for outside subscriptions. I am sure you will be pleased to hear that brief as has been the time at the disposal of your board to obtain applications from the shareholders, the amount required has been over subscribed. (Hear, hear.) Now we feel, as directors, that you do not hesitate to entrust the board with the expenditure of larger sums than we have hitherto had at our disposal. I think, without vanity, we may claim to have won your confidence, and to have shown you that with such means as you have hitherto entrusted us with we have been enabled to give you ample and sufficient returns. You have already had a dividend which is practically equal to half the money which you have subscribed, and in the very near future I shall be, I am sure, in a position to announce to you another very large and substantial increase to the amount earned by the company. As you are aware, our prospector, Mr. Hewitt, is engaged in Coolgardie with the object of discovering and taking up on behalf of this company such gold reefs as may be considered of value. He has, as our last circular shows you, discovered a very valuable claim which he has christened La Mascotte. I do not know whether that will be the permanent name of that claim; anyhow, it will go by that name at present. Mr. Hewitt reports that the reef he then and there discovered is widening out and shows good colours of gold, and is altogether developing into a remarkably fine property. The property consists of 36 acres in the very heart of that prosperous district known as the Black Flag. From that particular mine we have nothing to look for but success. The directors are taking every right and reasonable precaution to have this property proved thoroughly before offering it to the public. Considerable sums have been expended on it, and it will be from time to time inspected and reported upon by men whose opinions are valued in this city as mining experts. Every possible assurance will be given to the public that the property we shall ask them to subscribe for is one in which they may safely put their money. I think that is the position which the Prospectors' Association ought to establish and maintain. With regard to the Mount Margaret Reefs, as you are aware, you are the possessors of a very fine property of 36 acres, situated near the Mount Margaret Reward claim. The property, as the circular already issued to you shows, is developing in a way that gives the highest satisfaction to ourselves, who were the purchasers. The manager has given us consecutive reports, reaching from August of last year to April of the present year, and he has never had reason to report anything but good and satisfactory developments of the mine. That mine is remarkably fortunate in being in possession of a fine supply of fresh water. That appears to be the geological condition existing at Mount Margaret; but it is not existing, I am sorry to say, in other parts of the field, so far as is known. Mr. Watkins, our very able manager, sums up his journal showing the sequence of work by saying that he is satisfied that the numerous reefs on this property will average about 4 ounces to the ton. (Applause.) This is certainly a very fine, a very remarkable average, and I only trust that any further reefs discovered on the property will be found to be equally valuable. At present there are five known reefs on the property, which, as you are aware, is being fully and thoroughly developed and is fully manned, under able management, by our Prospectors' Association. We have carried out the practice which I laid down as that which the directors have been determined to follow—namely, to develop everything before offering it to the public. (Hear, hear.) I am in a position to tell you that satisfactory negotiations have been entered into for the almost immediate flotation of this company, the Mount Margaret Reefs (Limited). (Applause.) I have no reason whatever to doubt that the public, using that discernment which they certainly to a very large extent exercise, will see that this is no property got up for the mere purpose of rapid sale, but one acquired by a substantial and conscientious association of men to develop and prove it, and to satisfy themselves as to its worth and value before offering it for public subscription. Therefore, I feel perfectly sure that the subscriptions for the Mount Margaret Reefs will come in handsomely. (Applause.) I am not quite able for the moment to inform you as to the terms on which we are selling this property, and I think you will agree with me that there are times when it is more judicious not to disclose too much; but I may assure you it is on terms that will leave the Prospectors' Association as handsome a dividend in cash as any of the shareholders could possibly desire. (Applause.) Your directors, wishing to be supported in the view taken by Mr. Watkins and other gentlemen of the Mount Margaret Reefs, dispatched a member of their Exploring Association, who, among other matters, gave this opinion on Mount Margaret Reefs. He said:—“I have carefully examined the Mount Margaret Reefs. There are five reefs. The reefs show visible gold. Indication shows that gold exists in abundance on this property. A plentiful supply of water at all times by a well 76 feet deep. In my opinion, the mine will develop into a fine property.” We will now pass on, gentlemen, before putting these resolutions for adoption, to give you the reasons why we require this. We started, as you are aware, in a very modest way with a capital subscribed up to £10,000. That was all the money available for subscription. Your directors felt that their operations are extending so rapidly, and the means of providing investment of shareholders' money have come so readily to their hands, that they urge you to agree with the resolution to promote the increase of £10,000 more to the capital of the company. This, among other things, will have the primary benefit of providing a very considerable portion of the working capital of the Mascotte Mine, when we come to float it; so that, instead of having to give away our large interests in this company, for the purpose of underwriting for the expense of flotation, or for the subscriptions of people to take shares, which is the common practice, this company will be in a position to provide the whole of the working capital themselves, and to own every share in the company, the proceeds of the sales of which shares can then be divided among the shareholders. (Applause.) I think the

scheme will meet with your approval, and I beg, therefore, to move:—“That the capital of the company be increased to £30,000 by the creation of 10,000 new shares of £1 each.” (Applause.) Mr. W. H. SPEED seconded the resolution, and it was carried unanimously.

The CHAIRMAN also moved: “That each of the existing £10 ordinary shares, upon each of which the sum of £7 has been paid up, shall be divided into 10 £1 ordinary shares, upon each of which the sum of 14s. shall be credited as paid up, and that each of the existing £10 fully-paid ordinary shares shall be divided into 10 fully-paid £1 ordinary shares; that each of the existing £10 founders' shares shall be divided into 10 fully-paid £1 founders' shares.”

Mr. SPEED seconded the motion, which was also agreed to.

Mr. SPEED: Before we go I propose a vote of thanks to the Chairman and directors. The Chairman's speech, showing so lucidly the position of the company, was not exactly according to custom, but according to what ought to take place. (Applause.) The Chairman acquainted the shareholders with his plans, and took them into his confidence, and I am perfectly certain that a better board of directors so shareholders could wish for than the directors we have at present. I have, therefore, much pleasure in proposing a vote of thanks to the Chairman and directors. (Applause.) Mr. GRAHAM seconded the resolution, and it was carried by acclamation.

The CHAIRMAN: On behalf of myself and my co-directors, will you please accept the assurance of our thanks? We shall always endeavour to obtain the same vote of thanks, and I hope we shall succeed in obtaining it at every meeting we have, which, I trust, will extend for years. (Applause.) The meeting then concluded.

NOBEL'S DYNAMITE TRUST COMPANY, LIMITED.

The ordinary general meeting of the shareholders in Nobel's Dynamite Trust Company (Limited) was held yesterday, at Winchester House, E.C., Mr. THOMAS REID presiding.

The SECRETARY (Mr. H. M. Savage) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—I would remind you that this is our tenth annual meeting, the tenth time that I have had the personal privilege of addressing you with the recommendation of a dividend, and you will easily understand the satisfaction I feel at the success we have achieved at the end of a period at which our company has attained mature development, and shows results which fully justify the sanguine expectations of those who were instrumental in bringing about the union of interests which underlies our organisation. You will permit me, I feel sure, to avail myself of this occasion to review the period which has elapsed since we addressed ourselves to the shareholders of a number of existing explosives companies, with the suggestion that they should exchange their shares for shares in a trust company, in order to bring about an amalgamation, whereby the risks would be averaged as well as the profits, and economies attained by the co-operative working of factories situated in different localities. The improved results obtained year by year have not been due to any increase in price. The selling prices ruling 10 years ago were higher than at any other period, and are lower now than they have ever been. To account for the results I need only read you a passage from the prospectus of the company altering the terms which were then all in the future:—“The cumulative experience and skill, both technical and commercial, which is at the command of the board, constitutes a powerful and unique means, not only for retaining and extending the present trade of the several companies, but also and more especially for effecting important economies both in their manufacturing and commercial departments, including transport, storage, instructing, and other expensive arrangements indispensable for the safe and effective conduct of the business. Such economies enable the companies to continue the production of explosives of the highest standard at costs which also allow of consumers sharing in the advantages attained.” The effect of an organisation such as ours could, of course, only have been felt gradually, and it is thus that we find that the dividends have gradually improved; first 5 per cent., then 7½, then 8½ for two consecutive years, and after one dividend of 11 and one of 9, we have had 13 per cent. for three consecutive years, the present dividend of 13 per cent., if agreed to by this meeting, bring the total to 92½ per cent., or (say) an average of 9½ per cent. for the 10 years. Whilst paying these dividends we were likewise enabled to gradually strengthen the position of our subsidiary companies. It was agreed that the book value of the works should be reduced every year by a certain percentage, and that magazines, vessels, &c., should also be steadily written down. The total amount written off for depreciation by the subsidiary companies during the 10 years amounts to about £265,000, whilst all our factories have been constantly maintained in a state of the highest efficiency entirely out of revenue. As to reserves, they have been allowed to accumulate steadily, so that the total reserves held by our subsidiary companies now amount to £350,000, to which we must add the £25,000 which figure in the balance-sheet of this company as “premium on new shares” which is the premium obtained on the shares issued in 1889. The prodigious development of mining during the period I am reviewing has naturally had a beneficial influence on the development of our trade, and the introduction of smokeless powders has given us an entirely new source of revenue. You will remember that it was consequent on the introduction of smokeless powders that we entered into a close union with a number of the largest powder manufacturers, a union which still further increases the advantages we derive from having several strings to our bow. The Glasgow company decided last year to introduce ballistite in a modified form, suitable for sporting purposes. This powder, now well known as Sporting Ballistite, was, prior to its introduction, submitted by experts to a series of careful tests, extending over a long period; and notwithstanding the difficulties incidental to the introduction of a new sporting powder, such as the manufacture of suitable cases and suitable caps, it is satisfactory to know that the opinion originally formed of its superiority has been amply confirmed by the approval with which sportsmen have received the powder. These evidences of success have induced the Glasgow company to greatly extend their plant at Ardeer for manufacturing and loading purposes, so as to meet considerable home and foreign orders, of which there is now ample indication; and your directors believe that ballistite, from the unique character of its water-resisting and smokeless qualities, as well as from its uniformity under exposure to damp or heat, will soon become a leading sporting powder in the market, and a source of additional revenue to this company. An idea seems to prevail that we have enjoyed, and still enjoy, immunity from competition, but this is not so. We have had competition all along, and we now have competition in all our important markets. In Germany this is so keen that nitro-glycerine explosives are selling there below cost. I mention this in order to show you that our business has prospered notwithstanding competition, and that I look upon this as a much sadder feature than if the results attained were due to any special protection. Numbers of new explosives have been devised, patented, and introduced in the last 10 years, but none have been able to displace those in which we are interested. Our explosives remain those with which the vast majority of the mining, quarrying, and public works of the world are carried out, and our brands enjoy the highest reputation. This is due to the nature of the explosives themselves. They are theoretically perfect and have the advantage of meeting exactly the requirements of the consumers. With these excellent explosives the established reputation of our brands, a highly skilled body of workmen, most experienced chemists, and a highly developed commercial organisation, with our works written down to low valuations, our substantial reserves and extended interests, we can, I feel sure, look confidently to the future. Before closing I wish to express my regret at our having lost the valuable services of Mr. Wichmann.

who took so considerable a part in bringing about the formation of the company, and who during the last 10 years has given such constant and untiring attention to the business of the company. The Chairman then moved the adoption of the report and accounts, and the declaration of a dividend at the rate of 13 per cent., leaving £14,511 to be carried forward to the next account.

Sir CHAS. TENNANT seconded the motion, and it was agreed to. The retiring directors, Sir Chas. Tennant, Mr. John Darlington, and Dr. G. Aufschlager, were re-elected, as were also the auditors, Messrs. Cooper Brothers and Co., after which the meeting terminated.

CRIPPLE CREEK MINES, LIMITED.

The first general (or statutory) meeting of the shareholders in the Cripple Creek Mines (Limited) was held yesterday, at the offices of the company, No. 15, Cophall-avenue, Mr. CLAUD VAUTIN presiding.

The SECRETARY (Mr. G. Gaynor) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—You know as well as I do that this is simply a meeting called to comply with the Companies' Act. We have no business to transact, but if you would like to know what we have done during the short time we have been in existence, I shall be very pleased to tell you. Necessarily, we have not been in existence more than four months. We have acquired a very large interest in a Cripple Creek gold mine, called the Lucky Guss—in fact, our interest in the company amounts to £20,000 out of a capital of £100,000. We have also an interest in the developing of a very promising New Zealand property close to Scotty's, and have made arrangements for taking up a very large number of the shares in the company concerned. In addition, we are also entertaining negotiations for the acquisition of our extensive property at Cripple Creek. We have also been given the opportunity of taking over some bonds which have been in existence considerable time. If necessary, we can further develop the property referred to, which, for business reasons, I will not name, before we close the purchase. Personally, I feel sure that in a very short time the value of Cripple Creek properties must make itself evident in London. This gold field will outstrip everything, even the Rand, for from information we have, I should say in two years' time the output will be something like 5 or 6 millions per annum. All that which existed on the inception of the field is to whether the mine would pinch out in depth when passing into the granite have been fortunately exploded. It is a unique field, just as much as the Rand is. We have been rather chary in allotting shares, but we have issued sufficient to enable us to approach the Stock Exchange committee for a special settlement. However, before doing so we shall endeavour to have all the shares paid up, as it is a much better plan to do so. I do not think I need detain you any longer, except to thank you for coming to this somewhat dry meeting—statutory meetings always are so, I think. But if any gentleman has any questions to ask I shall be very pleased to answer them.

Replying to several questions asked by Mr. SHARLAND, the CHAIRMAN said the interest in the Lucky Guss Mine was paid for £100,000. As far as the last three months' return from the mine were concerned, as soon as the company acquired possession arrangements were made for the proper working of the mine so that a regular output might be secured. Shortly they expected to cut the mine May lode, from which as much as 100 ounces a ton had been got, but they did not expect to go so high. He could see nothing to prevent them from getting their application to the Stock Exchange committee granted.

The meeting then terminated.

NEW BULTFONTEIN MINING COMPANY LTD.

An extraordinary general meeting of the shareholders of the New Bultfontein Mining Company Ltd., was held at the offices of the Company, Chapside, Kimberley, South Africa. Mr. Sidney Mendelssohn presided, and there were also present Messrs. John Lacy, A. Brink, S. Hector, S. Mendelssohn, E. Mendelssohn, Swaab & Co., S. Swaab, R. Swaab, W. Reed, and B. Reed, H. J. Krauss and K. Krauss, E. Krauss, G. C. Cator, M. Mendelssohn, J. T. Vigne, S. S. Girdlestone, and W. T. Anderson, P. W. Mallett, and A. Knight.

The SECRETARY read the notice convening the meeting.

The CHAIRMAN, in explaining the objects of the meeting, referred to the scheme which had been provisionally accepted by the directors. The Board, he said, was unanimous on the subject of adopting the scheme, and was also of opinion that it should be put into operation forthwith. When he had the pleasure of addressing them at the meeting, he told them that in his opinion, when next addressings had been realised. The true history of the Company started from the middle of last January, the time when they commenced to wash the mine ground hauled from their own claims, and not from the extent of ground acquired from the Bultfontein Central mine. Since that time they had declared one dividend of 5 per cent. on 31st, and he did not think he would be betraying any confidence in telling them that dividend No. 2 was fairly on the way, and that on the 31st another dividend would be declared. Some shareholders thought they were doing very well as they were, and that they would leave well alone, and this was just what he was going to explain. A good many shareholders might have heard of some reports that their claims had made about the Company. They might have been told that they would never get the claims, and that when they got the claims they would never pay, and if they were fortunate, when they got them, they would be swamped by reef in six months. He did not think that these reports had proved very reliable, but he was sorry for those shareholders who could not see that such detractors stated what they hoped would come to pass. They hoped the Company would not pay, and the reef would swamp them. This brought him to the point that they had to deal with. If it were a question of reef, and reef alone, the meeting would never have been held. They were not afraid of reef, and were not going to bow before it. But there was another reason. Their present hauling output was something like 800 tons per day, and their washing average about 800 tons per day. He did not see very much chance, while working on the present system, of very materially increasing that output, which was to a great extent contingent upon everything going in good order in the mine. On the other hand they had had very complete estimates made since they had thought about this scheme, and they found that the underground system they could do three times the amount of work they were now doing, and more, if necessary. They also found, in carrying out this system, that the total cost of working the ground would be something like 4s. per load, and this estimate had been confirmed by a gentleman who had had great experience in carrying on work of another mine working on the same system. Every load of ground would bring them 8s. per load, and that seemed like two per cent. profit, in fact if he were to tell them what it was estimated their profits would be when this underground system was complete, he was very much afraid that they would think it was rather too good to be true. But he did not think they had any need to be afraid of this. In his own opinion, and the opinion of the Board, their profits would be regularly declared, and just as regularly paid. He estimated that during the time they would proceed upon the open working, the room to carry that out, so that the Company would not lose profits up to that date. Some people might think it would take a long time to carry out these works. It was evident they would be carried out by the forelock, and in every sense studying the true nature of the Company. There was one other question which he had carefully considered in this matter, and that was the question of production of diamonds—and of course that was always a very important consideration, when they were going to lay out £75,000 in a mine—and whether, if there were a heavy fall in diamonds,

they could maintain their profits. Many people in London and Kimberley had said to him, "Well, with all these new diamond ventures coming forward, all the Bultfontein Companies, Kamfersdam, Leicester mine, Robinson Mine, St. Augustine's, and a host of others of more or less value, do you not think it highly probable diamonds will fall in price?" To a certain extent, he might fairly claim to have some experience in the diamond trade in Kimberley, and looking at it from the "producers" and not the diamond merchants' point of view, he considered prices low. Good Bultfontein diamonds, which fetched in the market now only 25s., he well remembered paying 37s. 6d. for, and he had paid as much as 42s. for diamonds from the Old Bultfontein Diamond Mining Company, and there were buyers in Kimberley to-day who were not very likely to forget when they paid 45s. to 46s. for this Company's production. Of course the De Beers Consolidated Mines regulated the price of diamonds, and to his mind the directors of that concern treated the diamond trade in the same way that a celebrated doctor prescribed for certain of his patients. He advised them "always to get up from a meal hungry." It did not seem to him that the De Beers company were over-producing, or that they were likely at any time to do so, but men coming out here from time to time observed certain matters, and he noticed that gentlemen connected with the purchase of the De Beer's output, bought from time to time debris, River or Bultfontein goods or any goods that were produced. He must naturally assume that they did not get too much from the De Beers Company, and to carry out the illustration, they were at times "hungry" for diamonds. In any case, considering the new system they were inaugurating (he referred to the roller system of Messrs. Lochardt & McLelland, which these gentlemen were carrying out with great success in the United Bultfontein Co.), he did not think that they would find less than 30 carats to the 100 loads, and they were getting 25s. per carat for their diamonds, and taking this matter into consideration, they could very well stand a drop or 20 per cent. in the price of diamonds, always recollecting that they had no debentures and no enormous blocks of ground not working, for which large amounts of dividends had to be paid. They were working their claims for all they were worth, and were going to do the best for the shareholders. He had dwelt on most points which concerned the matter under consideration. As he had already told them, the Board was unanimous in support of the scheme. The firm he represented had the greatest faith in this company, and had doubled their holding in the last six months, and intended to very largely increase it. He could confidently recommend the scheme to the shareholders, and trusted it would meet with unanimous approval.

The Chairman then formally moved the following resolution:—
"That the nominal capital of the Company be increased to £200,000 by the creation of 50,000 new shares of £1 each, which shares shall not confer upon the holders thereof the right to participate in any dividend declared before the 1st day of July 1896."

The resolution was seconded and carried unanimously.

The following was also resolved:—
"That the provisional agreement entered into between the Directors and Messrs. Swaab & Co., of London, the terms whereof are set forth in the notice to shareholders, dated the 24th April 1896, be and is hereby confirmed, and that the Directors be and are hereby authorised to carry the same into effect."

The Chairman congratulated the shareholders upon their unanimity in this matter, and assured them that as they had done well in the past, they would do a great deal better in the future. He hoped, by the time the annual meeting of the Company was held, on July 14, to show the shareholders how well the Company had done during the past year.

The confirmatory meeting was fixed for May 20, this meeting being required by the Company's Act.

The proceedings terminated with a vote of thanks to the Chairman.

ELANDSFONTEIN NO. 2 GOLD MINING COMPANY, LIMITED.

The first ordinary (statutory) general meeting of shareholders in the Elandsfontein No. 2 Gold Mining Company (Limited) was held yesterday, at Winchester House, Colonel HUGHES-HALLETT presiding.

The SECRETARY (Mr. E. A. Foster) read the notice convening the meeting.

The CHAIRMAN said: Gentlemen—At this—the first (or statutory) meeting of the Elandsfontein No. 2 Gold Mining Company, which we are obliged, in accordance with the law governing public companies, to hold within four months of the inception and incorporation of a company—there will be no necessity for me to enter into any description of the property, as to its position, its character, and its prospective value, or to enter into any details regarding it, because, as shareholders yourselves of the original company, from which this was reconstructed, you are certainly quite as well, if not better, acquainted with those facts than I am. Probably many of you can go further back into the history of the company than I can, and, therefore, it would be a mere work of supererogation on my part were I this morning to do more than remind you that your property consists of 32 claims, and two other claims in addition, consisting of a water right, the water of which is sufficient to work, if need be, a battery of no fewer than 800 stamps. I believe you all held in your hands at the general meeting, at which the reconstruction scheme was passed, the report of Mr. Thomas Houghton, mining engineer and expert, who had been recently deputed by the directors of the old company to make a report as to the value of the property, as to the work that had been carried out upon it, and as to its probable prospects in the future. With the details of this report you are, I am quite sure, familiar, but whether they are fresh in your recollection or not, I feel certain you do not wish me to take up your valuable time this morning by recapitulating all those particular items. The report seems to me to be of a fairly extensive character, and of a satisfactory nature. Anyone who knows anything of the geological formation and strata of South Africa must be aware that it is idle to content oneself with merely scratching the surface of the ground. One has to sink shafts to reasonable depths and to drive levels in order to get at the real quality of the stuff which underlies. If I may be allowed to paraphrase two lines of one of our old poets, I should say:—

"Metal and wealth to surface seldom rise,
Sink deep your shafts, in them the metal lies."

That, gentlemen, is the policy which we, your present directors, intend pursuing with caution and with the least possible expense to the company. Now, in casting about for the right man to employ as mining manager to this company at your property, we have received a communication from Mr. Thomas Houghton to the effect that information had been imparted to him which, if proved to be correct, would very materially increase the value of the property. It was suggested that, for the sum of £500, that valuable information would be placed at the disposal of, and in the possession of, the directors. Well, we thought we were not justified in paying so large a price in so loose a fashion, because it occurred to us that with a little diplomacy and manoeuvring we might be able to obtain that valuable information without paying. In this you will be glad to hear that we have been successful. Through the instrumentality of Mr. Bowles, the manager of an adjoining property, we learned that he had opened up two reefs in the property under his control, that these reefs carried 9 dwts. of free gold to the ton, and that they manifestly ran through the extent of our property. That, no doubt, was the valuable information for which it was suggested we should pay £500. In the letter in which Mr. Bowles communicated this fact, he offered to contract to discover the two reefs in our property. We at once opened communications with him, with the result that he contracted for the sum of £300 to sink and complete the shaft to the depth of 100 feet, that being the depth at which he had struck the reefs in the adjoining property, and that he would engage to carry out the work within six weeks from the date of commencement. He proposed, at the same time, an alternative contract, and that was to sink to the two reefs, irrespective of time and depth, for the sum of £1000, the arrangement being that the work should be paid for

per foot as it proceeded, but that the company should retain in hand 20 per cent. of the amount due for the work until that work was completed. He supplemented this with a smaller undertaking, and it was this—that he would bore or sink a hole, or small shaft, to the depth of 10 feet at his own expense, conditionally that the company should sink a further 50 feet at their expense. That if then the reefs were discovered he was to be paid a fee of 100 guineas and his expenses, but that if the reefs were not discovered the company were not liable to him for any fee at all, and the expense incurred in sinking should be paid out of his own pocket. Having got so far, our next step was to make enquiries in the proper quarters in Johannesburg as to Mr. Bowles' capabilities as a mining man, and the replies we received being sufficiently satisfactory, we at last decided to accept the contract for sinking and completing a shaft to the depth of 100 feet for the sum of £300. We have since then appointed a well-known mining expert and engineer at Johannesburg, to superintend the conduct of the mining operations. The date of the letter in which we accepted Mr. Bowles' contract was May 2, so that you see we have not yet had time to report the progress we should like to have been able to report to you. At all events, whatever report Mr. Bowles does make we shall advise you of it, and keep you in touch with the operations as far as we can do. We have done our best, at all events—and I have done in my speech this morning—to bring you, as far as possible, up to date. Of course, I need not recall to your mind the very adverse circumstances under which we came into this official position as a board of directors, owing to the recent grave political disturbances and troubles in South Africa and the Transvaal. The unwarranted and, as it now transpires, the avine filibustering raid of a certain medical gentleman and his armed band has, I do not hesitate to say, set back the clock of South Africa for a couple of decades. Well, like every gold mining company, we have to face a battle with these adverse circumstances, and we shall overcome them to the best of our ability. We have done our best, acting in your interest, and as our humble judgment has led us; and we trust that thus far we have merited, and shall receive, your sincere and cordial approbation. The Chairman concluded by inviting questions.

Mr. COWARD asked whether the shareholders would not probably hear from Mr. Bowles in about six weeks.

The CHAIRMAN said that Mr. Bowles would have got their letter about the end of last week, so that in about six weeks they ought to hear what he was doing. Speaking in answer to another question, the Chairman said there were four directors, and their remuneration was £100 a year each.

The SECRETARY, in answer to a question, said that the company had £4000 in hand, and had a further 1s. call to make, which they could make when they had need of it. This would realise about £6000.

A vote of thanks to the Chairman and directors, heartily given on the motion of Mr. COWARD, terminated the proceedings.

BLACKETT'S CLAIM (LIMITED).

An extraordinary general meeting of shareholders in the Blakett's Claim (Limited) was held on Wednesday, at Winchester House.—Sir W. R. Olivey, who presided, explained that at the last meeting the directors undertook to summon a meeting within a reasonable time, for the purpose of considering the accounts. Had it not been for the unavoidable delay in getting the machinery off to the mine, and for the fact that they had been obliged to acquire some of the adjoining ground, into which it was supposed that their reefs ran, the working capital would have been sufficient to enable the board to start working. As it was, however, they felt bound to recommend the shareholders to adopt a scheme of reconstruction, the new company to have a capital of £70,000, instead of £60,000, and the shares to be issued at 17s. paid up, with a liability of 3s. The machinery had gone out, and the company had money enough to pay for it, so that it was hoped—although the board could not possibly give any pledge in the matter—that the first shilling would be sufficient for the directors' purposes. The Chairman concluded by moving the adoption of the report and accounts.—Mr. B. Seimert seconded the motion, which was carried unanimously.—The Chairman next moved resolutions reconstructing the company, which were seconded by Mr. A. E. Walton.—Mr. E. T. Read suggested as an alternative scheme that the directors should issue 10,000 5 per cent. debentures at 10s. each, the holders to have the right to exchange these for shares hereafter.—Mr. Burner supported this proposal, and after some discussion, the matter was adjourned until the following Friday night.

LONDON SCOTTISH AND AMERICAN TRUST (LIMITED).

The seventh annual general meeting of the shareholders in the London Scottish American Trust (Limited) was held on Thursday, at Cannon-street Hotel, E.C., under the presidency of Mr. A. H. Brown, M.P.—In moving the adoption of the report, the Chairman said that the directors had continued the policy of converting terminable debentures into 4 per cent. debenture stock, the amount so dealt with last year being nearly £94,000—the largest amount they had ever converted in one year. The price obtained had also been very satisfactory, the premium on the new stock issued last year having ranged from 5 to 8 per cent., and debentures repaid on the 15th of this month had been replaced by 4 per cent. debenture stock at a premium of nearly 10 per cent. The revenue was practically the same as in the previous year, and consequently they recommended the same dividend—viz., 3 per cent. The latter months of the year had seen the conclusion of the reorganisation of several American railways, and the reorganisation of several others had been well advanced, and might be completed soon. The balance profit and loss on realisation of securities was insignificant. During the year they had invested upwards of £800,000, and of course there had been sales of a corresponding amount. The average amount invested in one security was comparatively small. Although there had been a very great depreciation in American securities since this time last year, there was a net appreciation of about £3,000 in the new investments they had made. They were all of a high class. As regards the value of their investments he regretted to say that they still showed a heavy depreciation. The year under review had been a disappointing one to all interested in American securities.—The motion was seconded and carried unanimously.

SAN SEBASTIAN NITRATE COMPANY (LIMITED).

The seventh annual general meeting of the shareholders in the San Sebastian Nitrate Company (Limited) was held on Thursday at Winchester House, when Mr. A. R. Robertson, who presided, in moving the adoption of the report, expressed regret at the unsatisfactory results of the past year's working. Owing to over-production and consequent low prices the nitrate industry had been passing through a period of depression, but the recent completion of the nitrate combination had placed things on a better footing. Last year the total production of nitrate was 1,210,000 tons, and the consumption slightly over 1,000,000 tons, leaving a surplus of 200,000 tons. Since the combination has been in force prices had improved to between 5s. 7d. and 5s. 9d. per quintal on the coast, with every chance of going higher. Last year they made only 9000 tons of nitrate. A considerable sum of money had had to be expended on their plant and machinery, and, contrary to the wish of the board, who desired to spread the cost over three years, the auditors had insisted on its being charged to the past year's revenue. Already during the current year they had made some very satisfactory sales. The board were not proposing to declare a dividend on the present occasion, but as soon as they received certain remittances from the coast and monies due to them for iodine they hoped to do so. They had liquid assets of between £16,000 and £17,000, whereas they only owed about £4000.—Mr. G. M. Inglis seconded the motion, which was carried unanimously.

MASON AND BARRY (LIMITED).

At an extraordinary general meeting, held on Tuesday, at office, Cannon-street, Mr. Francis Ricardo presiding, the resolution passed at the meeting on the 11th inst. was confirmed, on the motion of the Chairman. The resolution was for reducing the capital of the company from £240,000 in shares of £4 each to £630,000 in shares of £3 each, the reduction to be effected by retaining £1 a share to the shareholders.

LIONSDALE ESTATES (LIMITED).

The second ordinary general meeting of the shareholders in the Liondale Estates (Limited) was held yesterday, at Winchester House, E.C., Mr. J. F. Torr presiding.—In moving the adoption of the report and accounts the Chairman said in the former they would find extracts from letters which explained the reason of the great delay that had taken place before the crushing was commenced. First the drought interfered with operations, and afterwards the Jameson raid upset their calculations. Notwithstanding the rather unfavourable reports which had been made in regard to the value of the reefs in the company's property, Mr. Hamilton, the mine manager, was still confident that the mine could be successfully worked, and in consequence the directors recommended that some further crushings be made immediately, and that further prospecting be carried out on the various reefs known to exist there. Even if the reefs were found not to be of a payable character, the company possessed a valuable asset in the shape of a waterfall, the use of which, no doubt, would be wanted by neighbouring companies. — Mr. Cummins seconded the resolution, which, after some discussion, was carried with one dissentient.—Mr. J. F. Torr was re-elected a director; the auditors, Messrs. Woodthorpe, Bevan, and Co., were re-appointed, and the meeting concluded with a vote of thanks to the Chairman and directors.

CORTEZ MINES (LIMITED).

An extraordinary general meeting of the Cortez Mines (Limited) was held on Thursday, at the Cannon-street Hotel, Mr. J. E. Carroll presiding.—The Chairman moved resolutions to the effect that the undertaking be wound up voluntarily, that Mr. W. Prosper Shaw of San Francisco, be appointed liquidator, and that he be authorised to sell up and transfer the undertaking and assets of the company subject to its liabilities, to the Tenabo Mill and Mining Company, upon terms of receiving fully paid-up shares in the purchasing company equivalent in value at par to the nominal amount of the shares in the Cortez Mines (Limited).—The resolutions were adopted without discussion.

CORRESPONDENCE.

We wish it to be understood that we do not hold ourselves responsible for, and do not necessarily endorse, the opinions of correspondents. All communications must be accompanied by the names and addresses of the senders, though these need not necessarily be published.

THE BESSEMER PROCESS.

TO THE EDITOR OF "THE MINING JOURNAL."

DEAR SIR,—I have delayed answering the criticisms on my address as President of the American Institute of Mining Engineers, on the "Invention of the Bessemer Process," until I could carefully consider the objections urged against the claims of William Kelly, and especially until the "argument by abuse" had been exhausted. The question at issue is one of fact, to be settled by the rules of evidence and not by abuse or denunciation or the demolishing of "claims" that were not advanced by me. I have carefully read every written and published word in reply that has come to my attention, and have as carefully reconsidered all the evidence offered as well as other that has been brought to my notice. This has only served to strengthen the conviction reached after careful investigation more than 20 years ago, a conclusion in which I was at one with many of the most prominent steel and iron makers of the United States at that time—viz., that William Kelly was the inventor of what Holley described as the essential feature of the Bessemer process, which was for many years known in this country among many steel and iron makers as the Pneumatic or Kelly process.

As so many things have been disputed which I did not assert, may I state just what I did claim in my address?

1st.—Accepting the definition of Holley, I claimed that the essential feature of the Bessemer process was "the decarburisation of crude cast-iron by the air blast in a vessel independent from the blast furnace, or furnace in which it was melted, and without the application of external heat."

2nd.—That the invention set forth in the patents under consideration of both Bessemer and Kelly was covered substantially by this definition.

3rd.—That Kelly, and not Bessemer, was the original inventor of the process so far as it is covered by this definition.

In proof of this claim I adduced—

1st.—The statements under oath of 22 persons taken in the interference case between Kelly and Bessemer in 1856-57, who testified of their own knowledge that in 1847 and 1851, and later, Kelly described and practised this invention.

2nd.—Decisions of the Commissioner of Patents of the United States in at least two cases in which it was decided, after extended hearings and investigations, that Kelly, not Bessemer, was the original inventor.

3rd.—The statement under oath of A. L. Holley that he considered Kelly's invention the first practical development of the process.

It will be noted that all of this evidence is either the decisions of sworn officials or is given under oath at legal hearings, when false swearing would be both moral and legal perjury. In discussing Kelly's claim to be the original inventor, I purposely and rigorously confined myself to this evidence, all of which is a matter of record and not of memory.

Just here let me say that I have no desire, nor have I attempted to "whittle down the Bessemer process," nor to sum it up in the words "blowing air into iron." If the question of the invention in its entirety of the Bessemer process as it is understood to-day were the point at issue, Sir Henry Bessemer is certainly not its sole inventor. He did not invent the Mushet feature, the use of the triple compound, and the production in the United States of as much as 4,160,072 tons of cast steel ingots in 1892 (not 1872, as Sir Henry states), would have been impossible without Holley's inventions for quick working. I purposely and properly confined my claim for Kelly to what has been called the pneumatic feature, and which Holley characterised as the essential feature of the process.

What is the answer of my critics to my claims? To the first it is that these men did not know what they were talking about; that they were unworthy of belief; that their testimony was "vague," and has been discredited.

I reply that on no single statement of fact has the testimony of one of these men been impeached or discredited, though the opportunity was afforded Bessemer to so impeach this testimony, both when the patent was originally granted to Kelly in 1857, and when the application for the reissue of his patent was before the Patent Office 14 years afterwards, in 1871.

In the interference suit in the Patent Office between Kelly and Bessemer in 1856-57, Bessemer was represented by the late Mr. R. H. Eddy, the attorney who secured his patent. This attorney in a letter dated February 28, 1857, professed his ability to show that "Kelly did not make the invention." The only evidence submitted in Bessemer's behalf to justify this assertion, so far as I have been able to ascertain, was a copy of the *Artisan* of September 1, 1856; of the *London Times* of August 14, 1856; and of Bessemer's English patent of October 17,

1855, No. 2321. The only claim made for this evidence was that it proved that Bessemer made his invention before October 17, 1855. There is not, in the files at Washington, so far as I can discover, one word of testimony to show that "Kelly did not make the invention." There is not a word of testimony, and never has been, to impeach the veracity of Kelly's witnesses, and when on April 13, 1857, the Commissioner of the United States Patent Office decided the question of priority of invention in favour of Kelly, and ordered a patent to issue to him unless an appeal was taken by Bessemer within 60 days, no appeal was taken, and Bessemer allowed the decision of the Patent Office in favour of Kelly's stand unchallenged, at least in the only legal way in which it could at that time be questioned.

In a word, the testimony of these men as to the facts set forth in their affidavits was uncontradicted by competent testimony at the time, and is to this day, after 40 years. It is not vague, and if the testimony is one-sided, as Sir Henry asserts, it is his fault. He had his day in Court, his privilege to cross-examine, and his right of appeal, and he exercised none of them. Under such conditions it is simple justice, and strictly in accord with the rules of evidence, to assume that these men told the truth. If they did, Kelly invented this process in 1847, at least seven or eight years before Bessemer's earliest date.

My second line of proof was the decisions of the United States Commissioner of Patents:—1st, in the interference suit in 1856-57; 2nd, in Kelly's application for an extension of his patent in 1871. The wording of these decisions, so far as relates to the point in question, was as follows:—In 1857, the Commissioner said:—

"It appears that by the concurrent testimony of numerous witnesses Kelly made this invention, and showed it by drawings and experiments as early as 1847, and this testimony appears to be reliable in every respect. . . . Priority of invention in this case is awarded to said Kelly."

In 1871 the Commissioner reported:—"Kelly's own statement of the history of his invention is full and clear, and when taken in connection with the statement of the witnesses seems to be both intelligible and truthful."

These two cases are, so far as I am aware, the only times when priority of invention has ever been directly or indirectly submitted in the United States to a legal or quasi-legal decision, and the decision was against Mr. Bessemer in both cases.

The answer by my critics, when they meet this point at all, is that they have but little respect for the decision of our Patent Office and judges—that is, these critics not only abuse the plaintiff, his counsel and witnesses, but the Court as well. In such cases it is generally regarded that the defendant has a very bad case. I am aware that the decisions of our Patent Office and Courts do not run in Great Britain, but they do here, and have force. Under these decisions, the patent of Bessemer having been superseded and made invalid, so far as the Patent Office was concerned, by the Kelly patent, it may be said that in a certain sense not 1 ton of steel made in the United States was ever made under the Bessemer patent in question. It was made under Kelly's patent which the Patent Office had decided to be the valid one, and after the extension of 1871, Bessemer's patent having expired and Kelly's being extended, and being the only one in existence, all steel was made under it until it expired in 1878, and Kelly was paid royalty.

3rd. In answer to my claim that A. L. Holley regarded Kelly as the original inventor, the answer is that this is not true, and that in making the assertion I am "throwing mud" upon the reputation of Alexander Lyman Holley. Extracts from letters of Holley are quoted against me.

In the appendix to my address before the American Institute of Mining Engineers, I give in full an affidavit of Holley's made in 1871. Question 9 in the affidavit and the answer were as follows:—

"9. What do you consider the value of the invention of Mr. Kelly in its relation to the pneumatic or Bessemer process as at present practised?"

Answer. "I consider Kelly's invention the first practical development of the pneumatic process, and it has been so recognised by the owners of the combined patents covering this process."

If any man in the world knew both sides of this controversy Alexander L. Holley was that man. He knew all the facts; he was fully competent to give an intelligent decision on the merits of the case; he was an able engineer; he was an honest man. He declared under oath in 1871, when the subject was fresh in his mind, that he considered "Kelly's invention the first practical development" of the pneumatic or Bessemer process. If Holley was competent to decide this question, and if he knew the facts, and no one dare deny either, there is no escape from the conclusion that Kelly's invention was the first practical development of this process.

A correspondent quotes in *Engineering* a letter of Holley's to show "what he had to say on the claims of Kelly as a first inventor." There is not one word in that letter that contradicts the position I have assumed. Indeed, it confirms my position. Mr. Holley says, for example:—"The patent of William Kelly, of Kentucky, (controlled by Mr. Ward and his associates) for refining crude iron by blasts of air antedates the Bessemer patent in this country." It was this patent that covered the invention which Holley declared to be "the first practical development of the pneumatic process."

In this letter of Holley, Bessemer is nowhere described as the inventor of the process, but as the "perfector and introducer." "It is proper to remark here," said Mr. Holley, and the correspondent puts it in italics, "that to Mr. Bessemer is awarded in this country the chief credit for perfecting and introducing the process that bears his name here and all over the world." This does not say the "inventor," nor does it give him the "entire credit," but the "chief credit" for perfecting and introducing the process. He even shares this with others in Holley's mind.

There is nothing in this letter of Holley to even throw a doubt on the statement in Holley's affidavit that he considered "Kelly's invention the first practical development of the pneumatic process."

I might rest my case here. Indeed, I have been strongly urged to do so as a "matter of courtesy" by some of the most prominent metallurgists and steel makers of this country, who are aware of the strength of certain evidence in my possession to which I have not even referred. Simply as a matter of courtesy, and not that I have no answer, I have concluded to take this advice, and not answer in detail Sir Henry Bessemer's letter, except briefly on two points.

1st. The "One-tuyere-vertical-blowing-downward" Converter, of which Sir Henry makes so much as the "first converter" was not Kelly's first converter, but the first built at Cambria Iron Works, and was so described by me. Mr. Kelly describes his first converter as follows:—

"The first converter used at the Suwanee Furnace was a square brick structure about 4 feet high. Inside, the converter was cylindrical, about 15 inches in diameter, with a concave bottom, in the centre of which was a tile perforated with small holes for tuyeres. In this tile was a small air chamber into which the blast pipe entered." Mr. Kelly states that the con-

verter charges in this vessel were 100 lbs., but he was troubled with weak blast, as he was in the six or seven other converters he built on a somewhat similar design, the metal clogging the tuyeres, and he was led to place tuyeres in the side near the bottom. He also had the self-same trouble with his iron that Bessemer did.

2nd. The impression is conveyed in the replies to my address that mine is the only discordant note that has ever been heard in this chime of universal praise to Bessemer. I have already quoted what Holley and the owners of the combined patents in the United States thought and said. If one acquainted with the facts had been asked who, from 1860 to 1870, were the most intelligent and most prominent metallurgists and iron manufacturers in the United States, among the first dozen would have been named Jas. Park, jun., of the Black Diamond Steel Works, Pittsburgh; Captain E. B. Ward, of Detroit, Michigan; D. J. Morrell, of the Cambria Ironworks; Bernard Lanth, the inventor of cold rolled shafting; and Wm. M. Lyon, of the Sigo Ironworks, Pittsburgh. Each of these is on record as expressing the belief that Kelly, not Bessemer, was the inventor of the process. Mr. Park, in a lecture in 1872, said:—"To Mr. Kelly, of Pittsburgh, justly belongs the honour of having been the first to discover . . . the great principle of the pneumatic or Bessemer process."

All through the years since 1857 Kelly's claim has not been allowed to slumber, but has again and again been restated.

As this letter is being written, Mr. Wm. Metcalf, formerly of the Crescent Steelworks, a gentleman who had been President both of the American Society of Civil Engineers and the American Institute of Mining Engineers, has published a work on "Steel," in which, after briefly referring to Bessemer's desire to make steel for guns and his invention, he says:—"At about the same time, or a little earlier, Mr. Kelly, of the United States, devised and patented the same method. Both of these gentlemen demonstrated the potencies of their invention, and neither brought it to a successful issue."

In this connection it may not be amiss if I quote the words of Zerah Colburn, who has been summoned as a witness by my critics. In the *Engineer* of December 23, 1864 (I quote at second hand, as I have no copy of the original), he says:—"It should be stated here that the first experiments in the conversion of melted cast iron into malleable steel by blowing air jets through the mass in fusion appear to have been made in 1847 by William Kelly, an ironmaster at the Suwanee Furnaces, Lyon County, Ky., United States."

"It is notorious that the conversion of iron in this manner at first required great experimental knowledge to make it successful, and Kelly, no doubt, soon found what difficulties were in his path. In June, 1857, however, after Mr. Bessemer had obtained an American patent, Kelly, having conclusively proved his priority of invention, also received a patent, in a form which virtually annulled that held by Mr. Bessemer for the States. It would be natural to say that there was an evident injustice in ranking an abandoned experiment before an invention which, now at least, has become successful."

It is but just to Mr. Kelly to state that he denied abandoning his experiment.

Let me say, in conclusion, that I have no desire to detract in the least from the credit that is justly due to Sir Henry Bessemer. Holley was right when he gave such generous praise to him as the "perfector and introducer" of this process. His mechanical appliances for the working of the process are deserving of the highest praise, as are the persistence and intelligence with which he set himself to work to make the process a success, when, as he and Longden so graphically state, the process was "pronounced by the iron trade a complete failure," and when the largest iron manufacturers in Great Britain "who had already negotiated terms for the use of the process joined in its condemnation, and abandoned all ideas of experimenting therewith." Indeed, it was not until 1863 that the first royalty was paid by John Brown and Co., the first licensee who got to work successfully in England. It is to this persistence and intelligence that much, not all, of the final success of this process in the world is due.—Very truly,

Pittsburg, May 14.

Jos. D. WEEKS.

THE REGULATION OF GOLD PRODUCTION.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—I sincerely regret to have given rise to a misunderstanding by qualifying *The Mining Journal* as a capitalist newspaper. Belonging myself to what is called the capitalist class, I cannot see that, in any sense, the word "capitalist" should be considered as a qualification to be repudiated for. I always thought that the impression left on me by our interviews was quite consistent with your views, but if I am mistaken I wish to apologise, and at the same time to acknowledge the extreme kindness you have shown to me by publishing my ideas in your columns. For doing so, you took a great deal of trouble, with the only object, as you say, to lay before your readers a matter which you thought might interest them, and you seemed glad at the same time to prove your friendly feelings towards the interests of labour. You will never have any reason to regret what you have done in that respect, because—don't doubt it—my scheme, after having been modified on more than one point, will be adopted some day, and you will always be entitled to claim your part for having done your best to bring about a state of things which will result in putting an end to too frequent frictions between capital and labour, not only in the coal mining industry but all round. I don't expect much from the Congress at Aix-la-Chapelle, but the matter will not be dropped; it will not be buried even with me, and, in the meanwhile, that it will be my turn to rejoice Sir George Elliot. I will try to push it on as hard as I possibly can. You cannot prevent being my scheme's "godfather," but I shall do my best, so that you may never be ashamed of your "godson," and, perhaps, you will even be willing to help me to "shape" him a little better before allowing him "do volonte de ses propres ailes." If so, you shall hear from me from time to time.

For to-day I send you the statement made in 1894 on my scheme by Mr. Alfred Definsseaux, a Belgian barrister and mining engineer, Member of the Belgian Parliament. It is not quite up to date, and contains even some errors which I have tried to correct in my pamphlet, pages 17-24; but if you do not mind taking the trouble to go through M. Definsseaux's paper you will be able to make yourself acquainted with the details of my scheme; you will thus be better able to judge of the merits of my ideas, and, at any rate, you will see that, far from considering the interests of owners and men to be divergent, we look upon them as quite identical as *fund*.

You will find the same ideas expressed in even more positive terms in a little pamphlet I published here some months ago (page 47). By page 37 you will see that I am not unaware of the friendly relations which generally exist in England between employers and employed, although just now Mr. Pickard, the President of the Federation of Miners of Great Britain, appears to be inclined to let the men do battle, unless the owners consent to their demand for a minimum wage. And consider that this demand, though just in principle, cannot be conceded by the owners under the present conditions.

On the Continent, friendly relations exist sometimes between employers and employed; but I regret to say that this state of things is rather exceptional, especially in Belgium. In my pamphlet, "Le Comité Ouvrier des Charbonnages de Paturage de Waimes," I have pointed out to the principal reasons for this being the case, indicating at the same time the means by which the miserable moral conditions of Continental miners could be ameliorated. These means are extremely simple, and my suggestions have been received in many quarters with more than ordinary praise. I don't know if they would please in England, because they are rather radical, from a certain point of view, and constitute an important innovation, particularly with regard to fines and deductions from wages—a question which is being dealt with just now by your legislators. My ideas have been discussed by the Press, not only in France, but in numerous continental papers and reviews, and even some weeks ago, in the Belgian Parliament, entire passages of my pamphlet were quoted by two or three members.

French and Belgian miners wish to live in peace and on good terms with their employers, and it is this desire more than anything else that make them, and their leaders, support my scheme. It is certainly not because they expect to receive five days' pay for four days' work; at any rate, this does not apply to French miners, who will have to work six days a week as long as the home production is inferior to consumption (page 20). I never promise anything unless it depends on me to realise it, and I have not promised "miners" anything concerning their wages. I have only told them what I thought would be fair and just for them to ask for, and what, in my opinion, their employers should grant them if, by combining, they procured sound trade instead of bad trade. You must not forget that I am an owner myself, and, as you said once, "I do not want to cut my own throat." I do not want to cut anybody's throat, and consumers' less than anybody else's.

On the contrary, I wish to treat consumers fairly, in our common interest, although I do not go so far in that direction as Sir George Elliot did in his scheme. If I remember well, Sir George was prepared to give consumers a share of the profits which his trust would realise by increasing the selling price of coal; but as my scheme aims simply at selling prices which will allow of fair remuneration to capital, and a living wage for labour, I do not see my way to sharing our profits with anybody else. I am naturally desirous to succeed, but I am by no means an enthusiast—my age forbids enthusiasm. Nor do I believe myself to be illogical in my proposals in condemning certain parts of Sir George Elliot's project, because the public would have been compelled to defray the cost of his financial combination. I had in view the investing public, and I am a declared antagonist of certain means of promoting companies. You nearly accuse me of murdering my infant—your godchild—and you will allow me to protest against such a serious offence.

But to come back to the idea put forward by me that the men ought to receive five days' pay for four days' work—with certain restrictions (page 20)—as long as in our common interest, and in the interest of sound trade, we limit the output to four days per week. I persist in believing that my suggestion is absolutely just and fair. But, again, this is a matter to be considered more closely when once the principle of my scheme for the regulation of the output is agreed to, and it will be an easy thing to overcome any difficulty relating to this point in due time. French and Belgian miners, and their leaders as well, have great confidence in me, because they look upon me as a true friend, and one who is far from seeking to put unreasonable ideas in their minds. I shall always use my best endeavours to stop them, should they try to exceed what I consider to be their just rights. Even in England, in some districts at least, the men have expressed their confidence in me, and as I am by no means an agitator—and still less a paid agitator—there is no fear of my trying to lead them astray. I sincerely wish to do miners good, to avoid misery and tears for their wives and children. I am convinced that with a little goodwill this result can be obtained, and it is for this reason principally that I continue to advocate their cause. I enclose a short report on my pamphlet made by the *Revue Socialiste*. As you may see, the French socialists support my ideas, and I even believe that they intend to give me a coup de main in order to get them adopted. In my opinion this is an important fact, not only because I am not a Socialist, but because the article has been written after having been discussed and approved of by several of the principal leaders of the Socialist Party. The attitude of these leaders ought, therefore, not to be lost sight of; and according to the position which the capitalist party will take up in this matter a great deal of good can be done to prevent many evils which the future keeps in store for society.

I should be glad to reply to the various objections made by you, but I am afraid of trespassing further on your valuable space. In the meanwhile, I repeat my best thanks for the kindness you have shown by again calling your readers' attention to the suggestions made by me.—Yours truly,
Paris, May 26.

EMILE LEWY.

THE STRONG FEELING AND PREJUDICE AGAINST INVESTMENT OF CAPITAL IN CORNISH MINES.

TO THE EDITOR OF "THE MINING JOURNAL."

DEAR SIR,—The great paralysing effect of these growing sentiments are in evidence all over the county of Cornwall, and until this feeling on the part of the investing public is reversed our Cornish mining will continue to languish and finally down to the vanishing end.

There can be no doubt Cornwall contains great mineral wealth. The past history of her great mines of copper, silver, lead, tin, and other minerals bears favourable comparison with any part of the world; and I think I am right in saying that no similar area can be shown to have produced more mineral wealth or made greater division of profits to the shareholders. Not only so, but we have great tracts of mineral ground waiting where outlay less than that so readily subscribed to open gold mines in far off countries would most effectually and profitably develop.

That late able miner, one of the most enterprising Cornwall ever knew, William Teague, told me he was of opinion that the United Mines at Gwennap would be profitably worked if boring machines and modern appliances were brought to bear on them. The Great Lode of these mines has produced 30 and 40 tons of copper ore per fathom; following these are numberless mines now idle in the western part of the county.

The central part of the county, the Par Valley and the Cornish districts are undoubtedly embedded in mineral wealth. Thus the Great Caradon district, Phoenix and other mines, are rich in mineral. Why should I further enumerate?

Experts from any part of the world would qualify my sentiments by the enormous lodes, the rocks they are embedded in, and the surface and underground evidences of the presence of mineral.

Why, then, does capital go out in millions to Africa, Australia, Canada, and the United States to open out mines, while the great mineral producing districts of Cornwall are idle and dormant?

It has been said, what would our copper mines be worth had they now been at work. Let me bring to your notice the fact that foreign copper mines are deeper than any Cornish mine has yet been sunk, and they pay 100 per cent. more wages to their miners than was ever paid in Cornwall, and we find any amount of capital from England readily found to work these foreign copper mines, while in Cornwall, with about one exception, no copper mine is at work.

The prejudice and feeling against Cornish mining cannot be against the mineral wealth of Cornwall, but against the relations and conditions under which Cornish mining is carried on.

A very able miner, well known in Cornwall and India, told me that he had witnessed in mines abroad returning more ore than any mine in Cornwall, one man employed overlooking mills that a great number are employed to do in Cornwall. The greatest tin mine in the world outside Cornwall treat all their ore automatically, reducing their dressing cost to the minimum, pay their miners 8s. a day, and make a very large yearly profit.

The economies in the foreign copper mines enable them to pay their miners more than double what we in Cornwall pay them, and bring up the ore from their deep mines and pay large profits. These economies of better appliances and machinery of foreign mines can be elaborated one after another.

Another great factor with foreign mines are their supplies of machinery materials. Their machinery is of the most labour-saving and the least expensive to maintain and keep in motion.

They have the best materials bought in the best markets. Then there is the thorough independence of the executive to perform their duty regardless of the personal or individual interests of those who supply the mines with their requirements.

If Cornish mines were placed in the same position in all their relations to foreign mines, public confidence would soon return and capital again be expended, where in years gone by prosperity was the great characteristic, and where again it will be experienced and not only re-establish Cornish mining, but increase our national wealth.

The mines that are now in Cornwall changing their financial constitution can take care to have directors who shall not overshadow the executive, but allow in every department the full development of the economies and successful application of the appliances of foreign mines in every relation to be manifest. We should then see a new era set in, and the strong outside feeling against the way our Cornish mines are conducted, now with holding capital from them, would again be removed, and the rich districts of the county command the attention and development it should do, which past history has proved and the future would confirm—that Cornwall is one of the richest mining areas of the world. I am, dear Sir, very obediently yours,
May 23.

R. H. WILLIAMS.

COMPLETE AND CHEAP GOLD EXTRACTION.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—Having followed with much interest the discussions in your columns upon the efficiency of chloride of sulphur as a solvent of gold, I have tried a few experiments upon the subject. As a few facts are worth more than an infinite mass of theory, I venture to communicate the results of my experiments in the hope that these may interest some of your readers:—

1.—A piece of pure gold foil, measuring 12.5 by 10 millimetres, and presenting, therefore, a surface of 250 square millimetres, weighing 0.120 grams, was immersed in 2.4 grams of dry normal sulphur chloride (S_2Cl_2) in a loosely-corked test tube, and left for 18 hours. At the end of this time the gold was taken out and again weighed on a delicate chemical balance; its weight was unchanged, and there was no indication of any reaction whatever.

2.—The same piece of gold was replaced in the test tube with the sulphur chloride, about 20 c.c. of distilled water added, and the whole left for 24 hours. At the end of that time a good deal of sulphur had separated out, and sulphurous acid and sulphuretted hydrogen could be detected in the gases evolved. The piece of gold was cleaned and weighed; its weight was unchanged, and the most delicate reagent could not detect a trace of gold in the solution. These experiments prove definitely that under the above conditions pure gold foil is not in the slightest degree attacked or dissolved by normal sulphur chloride, S_2Cl_2 .

3.—A few drops of sulphur chloride were shaken up with water, and a few drops of solution of chloride of gold were added; in a parallel experiment a few drops of sulphur chloride were dropped into a dilute solution of chloride of gold. In both cases a dark purplish brown precipitate began at once to form. By the end of 18 hours, in either case, the precipitation of the gold was quite complete, not a trace remaining in solution. Normal sulphur chloride, S_2Cl_2 , in the presence of water, forms, therefore, an efficient precipitant for any gold that may be already in solution. This last reaction seems fairly intelligible; according to the best authorities this sulphur chloride is slowly decomposed by water in accordance with the following equation (vide Watts's dictionary):— $2S_2Cl_2 + 3H_2O = 4HCl + H_2SO_4 + S$.

According to my experiments the actual reaction is rather more complex, SH_2 being produced as well as H_2SO_4 ; both these products are known to be complete precipitants of gold, and both have been used technically for that purpose. Theory, therefore, corroborates the results I obtained experimentally.—I am, Sir, yours obediently,
HENRY LOUIS.

The Durham College of Science, Newcastle-upon-Tyne, May 25.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—My only apology for continuing this correspondence is that the possibly successful application of a complete and cheap gold extraction process is of immeasurable importance to the great mining interests of this country, although it may not be so to the holder of the many processes at present in use.

Mr. Picard's description of the process is mainly correct, with exception of the temperature required. The temperature of 180° is not necessary, the ore can be placed in a cold saturated solution of salt and water, the dichloride of sulphur added, and the action will gradually commence, develop, and continue until such time as the whole of the metals and metalloids have been extracted and the metals taken into solution, sulphur in one form or another being present, the temperature rising during that action according to the nature of the materials acted upon.

Mr. Picard then says S_2Cl_2 decomposes water in accordance with the following equation:— $2S_2Cl_2 + 2H_2O = 4HCl + SO_2$. If HCl is produced, chlorine must have been produced, but the equation we require is that for the action of S_2Cl_2 in a saturated salt water solution with sulphur present. I am not prepared to say what the exact reactions that take place are; I leave that to the chemists. It is sufficient for the miner to know that the whole of the metal is taken into solution, and of this I have no doubt, for facts are stubborn things, and I have not only seen others do it, but have done it myself without fail, although Mr. Picard does not appear to have succeeded.

As I said in a previous letter, there is a certain amount of special practical knowledge required to work the process. Under

some circumstances gold will be found in the sulphur that collects on the top of the solution, and pyrites also. But there is no necessity to allow one or the other to take place. I think he will find also that in practice the sulphurous acid that he alludes to as coming off during the process does not become sulphurous acid gas until it comes into contact with the air; and again, that as we know that nitrate of soda with hydrochloric acid forms aqua regia capable of dissolving even titanium, Mr. Picard would seem to have succeeded in not dissolving gold in the strongest aqua regia known.

I have seen others with good knowledge of both chemistry and metal extraction processes express at first the same doubts and experience, the same difficulties as Mr. Picard has done, but ultimately been quite convinced as to the value of the process, and I confidently expect that he also will ultimately come to the same conclusion.

May 26.

M. TWEEDIE, Major-General.

TO THE EDITOR OF "THE MINING JOURNAL."

SIR,—I am personally obliged to Mr. Tweedie for his reply to Mr. Picard on the points of difficulty he seems to have seen in the new process of gold separation. I should have thought that the latter gentleman would have hailed with delight anything that was helpful in this struggling world to overcome its many difficulties. His attitude seems to be the reverse, as though he were interested in its ignorance and difficulties in gold separation than in something which is easy, clear, and complete in itself.

1. What Mr. Tweedie states under this section is exactly what I have found, and would not under ordinary circumstances expect anything else, besides the philosophy on which this process rests, for its success is not modern. In 1869 the writer saw in Professor Daniell's work on Chemistry, page 33, and Cooley, in his "Cyclopedia," page 1092, mention of the leading properties of S_2Cl_2 . I would recommend to Mr. Picard and all other sceptics to first reduce all such points as stated to actual experiments, and if after several unsuccessful attempts then to state the trouble and ask the wherefore.

This would save both time, trouble, and vexation, as nothing can be more annoying than a tissue of vague questions and imaginary difficulties on any new scheme or process. I am much pleased at the adaptation of S_2Cl_2 to gold separation, and verily believe it will come into general use very soon, and help to make many poor-paying gold companies a real success.—I am, dear Sir, yours truly,
St. Helens, Lancashire.

JAMES W. WORSEY.

THE SAPPHIRE AND RUBY MINES OF SOUTH-EASTERN SIAM.

AN interesting article on the above subject appeared in Thursday's *Times*, from the pen of their Special Correspondent:—Whatever importance attaches to Chentabun as the second port of Siam is due to its position in relation to the gem-producing areas of South-Eastern Asia. Before the discovery of the sapphire and ruby mines Chentabun was a poor fishing village. It is still a town of only 5000 inhabitants, but it has secured a considerable measure of prosperity, and this prosperity dates from the time when the mines were first occupied by experienced gem-diggers from Burma, British subjects who came over in increasing numbers and here founded Burmese mining communities, who have lived and been governed by themselves in all respects as if they were still in Burma.

At first the death rate among the emigrants was terrible. The districts where the gems are found are among the most malarious in Siam, and the malaria was intensified by the upturning of the soil. Whole parties died. Bands of men 30 and 40 in number left Burma for the mines, and at the end of the second year there was not one survivor. The mines are still unhealthy; they are less deadly than they were, but they are still so malarious that even Chinese, the most hardy of races, shrink from coming here. That the mines have been developed at all is due to the Burmese British subject; the mines are British property, leased for a long term of years by a British company, and exploited by British subjects. It is this fact which it is important to bear in mind should it ever happen that the provinces in which they are situated come within the sphere of French influence. That France covets the actual possession of these provinces is known to all, just as every one knows that Chentabun, which owes everything to British energy and enterprise, and nothing, absolutely nothing, to France, is now in French occupation.

The mines are situated about midway between Chentabun and Battambang, to the east of a line joining the two points. There are two chief mining areas, separated by a wooded range of high hills, the Patat range, which runs north-west and south-east; on the northern slope of the hills is the sapphire district of Pailin, on the southern is the ruby district of Nawong. The line of demarcation is well defined, though a few inferior sapphires are found at Nawong and a few inferior rubies at Pailin. At present the Pailin mines are the more productive. They are on the main road some 50 miles from Battambang. To reach them occupied me three days on pony-back, and rarely have I passed through a more dull and uninteresting country than this vast province of Battambang. Along this road there is scarcely any cultivation and hardly any population. Long grass smothered the country for miles, the dust rises in clouds, the ground under foot is as hard as a metal road and as uneven as the bed of a mountain creek. There is an occasional village of half-a-dozen houses, and two other villages more important, with a combined population of 250. During the rains the country is almost impassable from the abundance of water; during the dry season the chief difficulty is the scarcity of water. Water can now only be obtained in muddy ponds, churned and fouled by bullocks and buffaloes. The first night we reached the miserable village of Thangain, a wretched old hut, tambling down and half open to the sky, was shown us as the *aida*, or resting-place for travellers. It was so bad that I refused to occupy it. "Send for the *khaman* (the headman)," I said, "and I will occupy his house." "It is worse than this one," was the reply. The second night we camped out in the open, no habitations being within miles of us; the third day we reached the hills and rode through the forest to the mines. The contrast was striking. In the country, flat and dreary, and covered with long grass or stunted timber, was poverty and nakedness; no roads, no bridges, no wells, no help of any kind for the travellers, no rest houses better than a pigsty. We rose from the flats to the mines, and entered the thriving villages, where roads were well made and well kept and the streets were cleanly, where well-constructed bridges spanned the creeks and long footways of wood led across the marshy hollows, and where at every village there were comfortable and cleanly *saies* for the use of travellers, as picturesque as mountain cottages.

The Pailin mines are spread over an area 6 miles by 2 miles, and consist of 13 mining villages, the chief of which are Baw Taka and Baw Dineo. These two are more than 4 miles apart, but they are joined by an excellent road cut through the forest and well drained. Sapphires are found all over this district; the whole country side is riddled with holes sunk in the red soil down to the sapphire layer. Formerly the stones were found quite near the surface, but these places have long since been exhausted, although the Burmese still continue to turn over the old heaps in the firm conviction that precious stones grow. Now the stones are found at a depth of from 15 feet to 25 feet, in a reddish gravelly layer of varying thickness up to 18 inches. The pit sunk is usually some 5 feet in diameter, and either square or circular. 8-ft. is raised in bamboo baskets attached to the end of a balanced lever, and when

the sapphire layer is reached the stratum is carried to the nearest water and washed carefully for stones. Not more than one shaft in three pays for its working expenses, but when the sapphire layer is struck the profits may be large indeed. It is all a question of luck. To dig and work out one shaft occupies two or three men one month. Two or three Burmese generally go into partnership and hire Laos miners to work for them and sink the shaft at the rate of two ticals (2s. 8d.) per 18 inches. Occasionally sapphires of considerable value reward the miner, but the sapphires of Pailin are of more commercial value because of their quantity than because of their intrinsic excellence.

Every one in the mines depends upon the sapphire yield. Every one talks about sapphires and thinks and dreams of sapphires. Children wear ornaments of sapphires, and almost every Burman you meet is carrying a tiny bag of gems. The excitement in the mining villages is the speculation in sapphires.

The mines of Pailin were discovered some 30 years ago by a Burman, who still lives at Baw Taka. They were leased from the Governor of the province of Battambang by leases annually renewed till 1894. In that year a concession to work the mines was granted by the King to an English company, with a capital of £100,000—the Siam Exploring Company (Limited), who contracted to pay £2150 per annum for the privilege for a term of 10 years, with the right of renewal to 25. By the company the mines are sub-leased to the former lessee, Moung Kheng, for the same sum of £2150. The profits of the company are derived at present from only one source—from the tax of three ticals (4s.) levied upon all single men and women employed in the mines, and of five ticals upon all married couples. Not more than £600 represents the sum thus collected. After paying the salaries of manager and assistant manager, neither of whom resides at the mines, and office and other expenses both at Chentabun and Bangkok, it is difficult to see what amount remains for the shareholders. Of course, the company has other prospects, as its concession extends to all other mining properties in the three provinces of Battambang, Krat, and Chentabun. If the mines could be worked under the conditions which have been so successful in Kimberley, the profits would be splendid. But the mines cannot be so worked. When a company obtained the rights of working the ruby mines of Nawong in 1889 the first measure of the management was to announce that all the stones found in the area were to be sold to the company, whose expert would fix the value. The result was disaster. The Burmese deserted the mines in a body, crossed over to Pailin, and the company was ruined.

In Pailin the community is Burmese, or rather the masters are Burmese, while the workers are Laos from the west bank of the Mekong north of Cambodia; the customs are Burmese, and the mines are worked and managed in precisely the same way as are the mines in Burma. Every one is prosperous and contented. Money is easily earned and recklessly spent, and, as is the case in all mining communities the world over, where success depends upon luck rather than upon the foresight, games of chance are an engrossing passion. One reads much of the spread of civilisation nowadays, but never did I witness a more striking instance of it than the other evening in this village. I was strolling down the chief street of Baw Taka when I saw a light in a Burmese room. Looking through the shutters I had under my eyes a family party of Burmese absorbed in play. They were playing cards, and, in accordance with the most approved modern methods, counters were used to represent the money or stones played for. One of the gamblers was a Burmese woman with a monstrous cheroot between her lips; another was a Laos, and the game they were playing, ye gods, was poker!

The lessee or *Nai Passes* of Pailin is a British subject, a Burman, named Moung Kheng, who was formerly a clerk in the British Consulate in Bangkok. He is also the British headman, and is likewise a Siamese official, with the title of Luang, which is the grade next below that of Phra. He has been lessee of the mines for 14 years past, and to show how admirably he has organised and controlled the valuable property, it is only necessary to state that in the six years before he obtained the lease there were five lessees, not one of whom was successful. Large revenues are obtained by the lessee. He himself farms all the opium consumed in the mine, and as opium smoking is almost universal among the miners, there is a constant demand for this "necarious drug." Opium he purchases in Battambang or in Bangkok for £2 the bottle, and retails for £6 the bottle. He also lets the spirit farm, the pork farm, the gambling and lottery farms, and the *Nai* barrier at Sala Sak. From these sources he derives an income of at least £4800 per annum, and he has besides many other perquisites—the dispensing of justice, the sale of passports, and the inflow of many little presents from those who seek his influence. Anyone provided with a miner's right may dig at the mines; anyone may prospect for gems, and if he find a likely patch there are always speculators ready to make him an offer. It is common for claims to be sold and resold many times before the surface has even been touched by pick. Nearly all the overseers and headmen, as I have said, and all the stone buyers are Burmese, while the workmen are mainly Laos, wonderful hardy fellows, who leave their wretched country on the west of the Mekong and make the long pilgrimage here on foot, knowing that immediate employment is always awaiting them. Indeed, the chief difficulty in the mines is the lack of servants. Jungle fever is so rife that the Cambodians of Battambang dread coming here. Even Chinese, with all their marvellous powers of acclimatisation, cannot survive the fever of Pailin. There are only 26 Chinese in the mines, and a mere handful of these was attracted from China. But the hardy Laos stand the climate admirably, even better than the Burmese, and it is the Laos whose services are here indispensable. Laos can earn easily from 8s. to 12s. a month and food; but they are lazy and indifferent to work, and feel themselves the masters of the situation. They have, too, a pretty talent for dacoity, and they show the invariable peculiarity of being more dishonest the more intelligent they are. At all the workings it is the common sight to see the Burmese squat on his heels at the surface watching the work done by his two Laos employes at the bottom of the shaft. When the sapphire layer is struck the Burmese is particularly vigilant, and he usually himself does the washing with his own hands.

There are some 3500 people in Pailin, all the best, to the number of more than 2000, being British subjects, a large proportion of whom are legally registered by a British Vice-Consul. If the French should ever by any misfortune obtain possession of the mine and introduce other methods of work, the Burmese would desert en masse. At present there is one French subject at the mines, and he is a doubtful Madras from Pondichery. All here who are not British are Siamese subjects—though of Siamese themselves there are less than 20. Admirable order is kept at the mines, yet one sees no apparent exercise of authority. It is as if the members of the community had combined to maintain order among themselves independent of surveillance. Next to the British headman, the *Nai Passes*, the most important man in the mine is a wily Burmese, the Kamnan or headman of Baw Dineo. His record in Burma was an interesting one, being of that kind which rendered it advisable that he should keep beyond the purview of the Government authorities. But his youthful indiscretions long since forgotten. The Kamnan called upon me, and was proud to tell me of the honour in which he was held by his fellow townsmen. Looking into the opposite corner, he said: "Twenty years have I been here, and never a complaint against me, never a complaint," and he sighed, as if in regret of the immutability of his record. My interpreter whispered to me: "The sinner, and only a few months ago he was told by the British Consul that if there were any more complaints against him he would be deported." Here in the mine the Burmese treat me with charming hospitality. I have quarters in an excellent sala facing the chief vat of all the mines. At the back runs the creek which separates the province of Battambang from the province of Chentabun. Every morning at sunrise we can see the yellow-robed priests issue from the temple in single file, and, preceded by the notes of a musical gong, go forth through the village to mutely receive the offerings of the faithful. In the evening we hear the temple boys at their prayers, and can watch the Burmese

maidens tripping down to their evening bath in the creek. The Burmese are charming in their manners. If you go into any Burmese house here you are made welcome. Tea is brewed for you, and the tray of cigarette papers and tobacco pushed over beside you. If you are of the country the tray of chewing things in little silver boxes is offered you. If it is the day-time the stone-buyers will show you their gems, putting them, 12 at a time, on a brass tray, and always showing you the best last. In every stone-buyer's house there is an open window placed so that you can examine the stones by light, and see well their transparency and intensity of colour. And there are always scales handy whereon to weigh the stones with the subsidiary coins of India. For Calcutta is the best market for Pailin sapphires, and it is Indian coins which are invariably used as weights. Stones are sold both uncut and cut, and either set in rings or free. Their price is well determined, and from the practice of years every Burman buyer here is a trained expert in gems. Stones are roughly divided into four classes, and sold by twelves or fifteens, or more at a time. Valuable gems are sold separately for any price from £150 downwards. Some of the buyers carry away to Calcutta selections of stones of a money value in individual cases of more than £2000. Many of the stone buyers who purchase for export live at Pailin, others at Chentabun, but every Burman dabbles in the sale of gems, and gambling is universal. Several purchasers generally combine to send their stones to Calcutta in charge of parties of Burmese, who make this their special business. There the sales are negotiated by native brokers. All stones eventually find their way to Calcutta.

Stores are mainly brought to the mines from Chentabun by packmen and pack bullocks. There is a road, and there are rivers without bridges. At the best of times it is a journey of four nights by elephant and of eight nights by pack bullock. The distance is 43 miles, and could be walked by an energetic Englishman in a day and a half. But this is a country of patience. In the rains the journey occupies 20 days or more, as the rivers are then unfordable. A railway could be easily constructed.

The mines of Nawong, the other mines of south-eastern Siam, are mainly rich in rubies. So abundant are the rubies that one class of stone suitable for certain uses in watchmaking can be purchased by the hundredweight. Rubies found in Nawong are inferior to those of Burma, but still the mines are very rich. One ruby found there was sold in Calcutta for £500. From Chentabun to the mines of Nawong is a distance of two days by boat or pony. The mines have not yet recovered the exodus of miners that took place on the attempt to alter the Burmese methods of work in 1889. Then there was a population of more than 2000, now there is population of 250 Burmese, with a native population of 250. Then there were 250 horses, now there are less than 50. All right in the mines now belong to the Siam Exploring Company (Limited), who purchased them from the Sapphires and Rubies of Siam (Limited) for £55,000, the vendor company having been only five years before floated with a capital of £300,000. Nawong is under the same management as Pailin, and worked by Burmese methods. Many mines are comprised in the area, only one of which is in the province of Chentabun, the remainder being in the adjoining province of Krat. The mine is entirely supplied from Chentabun.

THE CONTINENTAL AND WESTERN AUSTRALIAN TRUST, LIMITED.

IN a circular to the shareholders, the directors of the Continental and Western Australian Trust (Limited) state:—"At the statutory meeting of shareholders, held on December 23 last, full information of the progress of the company up to that time was afforded you in the Chairman's speech. Now that an additional period of four months has elapsed, the directors desire to give you some further details of the company's operations. Interests in the following undertakings have been acquired by the company:—

HANNAN'S BROWNHILL GOLD MINING COMPANY, LIMITED (capital £75,000, in 75,000 shares of £1 each).—This company has now commenced crushing, and we are officially informed that the machinery is working satisfactorily. Those who know the property well, and are in the best position to judge, believe this will prove the premier dividend-paying mine of Western Australia. The directors have acquired a considerable interest in the company.

THE WATER TRUST MINING AND PUBLIC CRUSHING COMPANY OF WESTERN AUSTRALIA, LIMITED (capital £250,000, in 250,000 shares of £1 each; 50,000 shares held in reserve for future issue).—This company owns 60 acres of gold mining leases at Southern Cross, and extensive water rights, consisting of a large lagoon at Northam, fed by fresh water springs, together with sufficient freehold land in the immediate vicinity for the erection of a large crushing plant. It is intended to treat the ores from the company's own mines, and also to crush on a large scale for the public. Water from the lagoon will be conveyed by rail to the Southern Cross and Coolgardie Gold Fields, where it can be retailed at a considerable profit. The company's lagoon and mill site are connected by a short siding to the Government railway, over which preferential rates are enjoyed for the conveyance of ores from the goldfields to Northam, and also for the return freight of water. The company has been energetically directed. Practically, all the machinery for a mill of 80 stamps has been shipped, and a portion is in course of erection. The mines are meanwhile being actively developed. From its various sources of revenue the company should be able to make excellent returns to its shareholders.

THE OREUM GOLD MINING ASSOCIATION, LIMITED (capital £500,000, in 497,400 ordinary and 2600 founders' shares of £1 each).—This company was formed, under the auspices of important French financiers, to invest capital in gold mining, land, and exploration enterprises in Australia, Africa, India, and elsewhere. The great majority of its shares are held on the Continent. Your directors acquired an interest in the company on its formation, considering it highly desirable to assist in attracting foreign capital to Western Australian enterprises, and foreseeing that this was likely to prove a powerful corporation, supported as it is by a splendid body of foreign capitalists, with which it would be of great advantage to your company to be connected. The soundness of this view has already been demonstrated in practice. Moreover, as the company possesses ample capital and enjoys influence in the best quarters, it is likely to prove a steadily profitable undertaking.

EAST MURCHISON UNITED, LIMITED (capital £150,000, in 150,000 shares of £1 each; 20,000 shares are held in reserve for future issue).—The directors acquired an interest in this company upon its flotation in December last. The property consists of 62 acres of gold mining leases at Lawler's Find, in the East Murchison district. It was originally secured for the London and Western Australian Exploration Company (Limited) by Mr. F. B. Dunsford, whom the directors have occasion to mention in a later paragraph. The prospects before these mines are declared by its sponsors to be second to none in the colony. Great facilities for working render the expenses low; the auriferous formation is of a permanent character and of very large extent, and the average yield of gold shows a minimum value of £5 to £6 per ton. Under such circumstances the interest obtained in this company can hardly fail to prove highly remunerative.

MENZIES UNITED MINES, LIMITED (capital £120,000, in 120,000 shares of £1 each).—This company owns five mining leases at Menzies Find; 84 acres in all. An interest was secured on favourable terms when the company was floated. Rich gold is being won on the surrounding properties. The Friday reef—from which recent crushings have yielded 3 ounces of gold per ton—as well as the Lady Shenton reef, according to their course and position, must traverse the company's leases. In sinking the main shaft in order to cut the Friday reef the manager reports that gold-bearing leaders have already been met with.

LYNDHURST GOLD FIELDS, LIMITED (capital £400,000, in 400,000 shares of £1 each).—This property is of very great extent, consisting of 280 acres of auriferous territory, situated near the town of Lyndhurst, New South Wales. The deposits are declared, on the highest authority, to be similar in character to those of the Rand, and some of the well-known financiers of Johannesburg and the Witwatersrand are interested in the undertaking. The ore can be easily worked on a very large scale in such a manner that this may be considered as an industrial undertaking from which ample and steady returns are confidently looked for. The directors secured an interest on very favourable conditions.

MELVILLE WATER PARK ESTATE, LIMITED (capital £100,000, in 100,000 shares of £1 each).—An important interest in this company has been secured by your directors, in conjunction with several other prominent West Australian trust and exploration companies. The company owns 4549 acres of land, with several miles of river facing the city of Perth, Western Australia. The property was purchased for cash at a most advantageous price, and the company has formed an elaborate and well-considered scheme for its development, which is being energetically proceeded with. The directors believe this to be one of the soundest of their investments, offering prospects of profits at no distant date equal to those derivable from gold mines of the first rank.

CRUICKSHANK SOUTH UNITED GOLD MINES, LIMITED (capital £120,000, in 120,000 shares of £1 each).—In co-operation with the West Australian Share Corporation (Limited) the directors have acquired a considerable interest in this gold mining company upon very favourable terms. The property is situated immediately north of and adjoining the Hannan's Brownhill Gold Mine, and your directors are in possession of authentic information that the Brownhill lode has been cut in the Cruickshank South United at a depth of 100 feet, the vein being 12 feet thick and carrying good gold. The shares have been in active demand, and are now quoted at a large premium.

BETHANGA GOLD FIELDS, LIMITED (capital £300,000, in 60,000 ordinary shares of £1 each).—These goldfields are situated in the well-known mining district of Beechworth, Victoria. The mines constitute a large and well-proved property of 522 acres, and are earning large profits monthly with a very inadequate plant. The directors have accepted an important interest in the company, offered them by the London and Western Australian Exploration Company (Limited). The plant is intended to be increased and the mines fully opened up, there being hundreds of thousands of tons of ore in sight ready for treatment.

CUE 1 GOLD MINE, LIMITED (capital £100,000, in 100,000 shares of £1 each).—This company was formed in December last, to acquire and work a gold mining lease situated near the town of Cue, in the Murchison district of Western Australia. The directors secured an interest in the company on exceptionally favourable terms. A 10 stamp battery, with the necessary machinery and winding plant, are on the property in full working order. Five additional stamps are also on the way to the mine, where some thousands of tons of ore are in sight. The last crushing gave 1150 ounces from 690 tons, an average of 1 ounce 13 dwts. per ton.

NEW ZEALAND TALISMAN GOLD MINING COMPANY, LIMITED (capital £150,000, in 150,000 shares of £1 each).—This company has been recently formed to acquire and work two properties in the Waikauri district of New Zealand, with an area of 60 acres. The mines are an exceptionally important and promising venture. From one property 280 tons of ore have been won, which realised over £2770. A 10 stamp battery is already erected, and a complete cyanide plant is installed. The directors secured an interest upon the flotation of the company, and expect very large profits to result.

MENZIES GOLD ESTATES, LIMITED (capital £250,000, in 250,000 shares of £1 each).—This company was formed in July, 1895, to acquire 15 gold mining leases at Menzies Find (W.A.), with a total area of 233 acres. The company has sold 84 acres of its property to the Menzies United Mines (Limited) and 95 acres to the Menzies Gold Development Company (Limited). The remaining leases are retained by the company, and development is being actively proceeded with. A 10-stamp mill is in course of erection. The latest cable report of the manager states that the prospects are exceedingly favourable, the lode in each lease looking most promising. A shaft is intended to be sunk to intersect the Cruickshank Reef, which, from its bearing, passes through two of the company's leases. The directors have carried out a transaction of some magnitude with the company, having reason to anticipate a very profitable outcome from the negotiation. Their expectations are being fully borne out, and a substantial return will be realised.

HAMPTON TOWN SITE.—Five blocks of land have been secured at Hampton Town at moderate prices. It is the intention of your directors to erect bungalows or other suitable buildings on these blocks, from which a handsome rental will be derived. Hampton Town, owing to its charming and healthy situation, is becoming a necessary suburb of Coolgardie, from which it is distant only a short journey. The construction of a tramway to cover this distance has been authorised, and is expected to be commenced without delay.

MINING CLAIMS IN WESTERN AUSTRALIA.—An immense number of mining claims in all the proclaimed districts of the colony have been, and continue to be, offered to your directors from time to time. The great majority of these are at once examined by Messrs. Bewick, Moreing, and Co., the company's consulting engineers. The directors have the following claims under option, which they are prospecting under the advice of their consulting engineers: Coolgardie district. One lease of 12 acres.—Bardec district. Three leases, continuous. Pegged out on the line of the Excelsior reef. Area not yet definitely determined.—Yalgoo district, two leases, area 18 acres.—North Coolgardie district, one lease of 12 acres. In addition to these, a further property in the North Coolgardie district and some others in the Siberia district are under offer, and are believed to promise favourably. Options upon them are, therefore, expected to be decided upon immediately.

"The directors have great pleasure in announcing that they have made arrangements with Mr. F. B. Dunsford to proceed to the colony to select properties for the company. Mr. Dunsford secured for the London and Western Australian Exploration Company (Limited) the mining claims now owned by the East Murchison United (Limited), which have already been alluded to. No better proof of his good judgment could be adduced. Mr. Dunsford is already on his way to Western Australia, and your directors believe that his mission cannot fail to be fruitful of good results." After expressing their indebtedness to the efforts of the company's manager and representative in Western Australia, Mr. Edward Hooper, of the firm of Bewick, Moreing and Co., the circular concludes as follows:—"While feeling assured that you will approve of the rapid progress made by the company, the directors desire to add that, so soon as some transactions of great importance in which they are engaged are completed, they contemplate declaring a very substantial dividend.—By order, CHARLES ALGERNON MOREING, General Manager."

IMPORTANT DISCOVERY OF GOLD IN BRITISH COLUMBIA.

We have received from our correspondent, Mr. Fellow Harvey, the following cablegram:—"Important discovery of gold (at) Lillooet. The gold-bearing vein can be traced for a long distance. Assay value of ore now being milled, 91 ounces per ton, (ref) varying in width from 8 feet. The control of the stock is in the hands of John M. MacKinnon."

KILLIFRETH MINE.

At a meeting of Killifreth shareholders on the mine on Tuesday the resolutions passed at a recent meeting in favour of the Limited Liability Scheme brought forward by a majority of the committee were confirmed.

MINING IN CORNWALL AND DEVON: NOTES ON MINING IN THE WEST. (FROM OUR OWN CORRESPONDENT.)

THE better feeling which has been evident in Cornwall in the last week or two continues. It undoubtedly arose, in the first place, from the passing of resolutions by both Agar and East Pool shareholders agreeing to allow their little differences to be settled in a somewhat cooler atmosphere than some of the meetings of the last committees have taken place in. This gave the public a little more confidence, for until some *modus vivendi* had been arrived at in this matter it was useless to think of making any money in the shares. But the position of this, and the firmer tone of the market has had an effect on shares which will probably remain where it is. Since we last wrote, the situation has somewhat changed. Representatives of the two committees have met in London, and had a conference with the solicitors of Lord Roberts. The outcome is a more sensible and satisfactory one than has been the result of any previous conference, for even if the suggestions were made do not come to anything, there is evidently a better feeling between the parties than there has been. Briefly, what has happened is that Agar people, believing that they have valuable property in the sett, are unwilling to relinquish it without another trial, and both the committees will now suggest to their respective shareholders that each mine should resume work, that the question of the water charges should be left to arbitration, and that whatever the award be either party shall only be free to stop its engine on giving (say) 12 months' notice. While we should have preferred the two setts worked as one, yet the suggestions of this conference are welcome, because they will, if carried out, achieve one very important purpose. They will retain the interest in the county of a man as Mr. Hattersley and his co-shareholders, who have made a considerable sum in mining, and who deserve to have every opportunity of getting recouped. Possibly, when things are again settled down into full working order, there may be a disposition on the part of the two companies to amalgamate their fortunes and go in for one limited company for the mines which are on that run. It is important, however, that these meetings, if they are to be held, should take place at once, so as to avoid any hitch in the continuous working of the engines. Both engines are now at work, Agar at the expense of Mr. Strauss, E.P. and East Pool as an ordinary charge on the company. Certain defects have had to be made good, but Agar engine is not running very smoothly yet; but the defects will no doubt be made good very soon, and if only there can be the four engines of North Croft, South Croft, East Pool, and Agar kept continuously pumping on this enormous pool of water there will soon be some workings again open. Under the best conditions, however, it is likely to take several months to put the whole in fork, but the thing will be expedited as much as possible by the use of water power. What the shareholders want to hear now is that the meetings are necessary under this altered aspect have been concluded.

ALTHOUGH the Killifreth conversion scheme has been carried out, doubt is expressed as to whether they will be able to get the conversion confirmed by the necessary majority at the confirmatory meeting. Those who oppose the adoption of Limited Liability are still confident of carrying their point. In the meantime, it is worthy of note that the shares have advanced to 10s.

DOLCOATH is looking extremely well—better than for some months past, and shares are in general tightly held. It is not likely that the shareholders will have long to wait for something more substantial than good reports and fair promises.

TREAS is very little doing in Carn Brea and Tinroft shares, as is generally natural under present circumstances; but the amalgamation is proceeding quietly, and without a hitch. The outlook at Carn Brea has recently materially improved, and the prospects of the amalgamated sets again entering the dividend-paying list is not so dim as at the time it seemed to be.

NEW ISSUE.

THE ROME CONSOLIDATED GOLD MINES (LIMITED).

IN our advertisement columns we announce that the prospectus of this company will be made public on Monday next. In the meantime, we are in a position to state that the capital of £100,000 in £1 shares, and that the company is formed to acquire and develop two mining grants, extending over 24 acres, situated about 11 miles south-south-west of Coolidge, known as leases 1382 A and 963, granted on the usual conditions by the Government of Western Australia. Reports upon the mines intended to be worked have been made by the following authorities:—Prof. W. H. Matthews, M.E.; T. E. Hardy, manager Bayley's mine and other mines; C. Grell, late manager Talisman mine; R. N. Wells, M.E., Coolgardie. Prof. Wm. Nicholas, who dated 19th April, 1895, says:—"A vertical shaft has been sunk on the reef to a depth of 54 feet; in the bottom the reef is 18 inches in thickness. A portion of the reef in the bottom of the shaft was stripped of its footwall, broken in my presence, and was found to carry in the quartz very coarse gold. So much of the latter (gold) occurred in the reef that some of the pieces of quartz were hanging together with gold. . . . Gold has been found in the quartz of this reef continuously from the surface, but the richest gold-bearing quartz yet broken is that now discovered in the bottom of this shaft. To the south, down the hill side for some 150 feet, there are here and there crops up on the line of this reef. The line of this reef to be correct there is within this property the full length of over 480 yards on the line of this reef. There are seven quartz and ironstone reefs proved to exist within this property, and there is every probability of another rich reef, which has been traced close up to the eastern boundary of the Rome block, will also be found within this reef."

MAWSON'S REWARD CLAIM.

THE following circular has been issued:—Since the appointment of the new manager, Mr. Tunnington, the developments on the mine have been of a most encouraging nature. The directors, having abandoned hope in the mine, were not inclined to give credence upon the reports when they first reached them. There have now been confirmed both by cablegram and otherwise, and there seems to be no doubt that a considerable amount of payable ore is in sight ready for milling, and that the mine, at last, shows every prospect of a successful result. It appears from information now to hand that the payable ore was "cut out" by a huge bar of dolomite. This has now been traced through. Payable ore has also been discovered in a shaft sunk by the new manager at the north end of the property. As soon as further information is received by mail it is the intention of the directors to call a meeting of shareholders, and submit the whole matter to them. In the meantime the West Australian Gold Mining (Limited) are assisting in every possible way in the carrying out of the mine and erection of machinery, and have advanced the necessary capital.

"THE JUMPERS" GOLD MINING COMPANY.

The following is taken from the report of the directors of "The Jumpers" Gold Mining Company, Limited, for the half-year ending January 31, 1896:—

Financial.—The position is as follows: Cash at bankers and on hand, £17,788 2s. 6d.; gold in transit, £5,891 0s. 7d.; concentrates on hand, £10,219 7s. 5d.; investment account, £1,190; sundry debtors, £78 7s. 5d.—£35,166 17s. 11d.

Liabilities.—Sundry creditors, January purchases, £4,477 2s. 4d.; native wages, £1,239 9s. 3d.; dividends unclaimed, £273 4s. 3d.;—£5,989 15s. 10d., leaving a credit balance of £29,177 2s. 1d. The value of stores on hand is £2,814 18s.

Profit and Loss Account.—Profit on mining, milling, &c., during the half-year, £44,616 3s. 10d.; interest received, £82 8s.—£44,698 11s. 10d. Balance brought forward from last account, £37,281 14s. 7d.; less audit fees and bonus voted at eighth annual meeting, £2,227 10s.—£55,054 4s. 7d., leaving a balance to credit of profit and loss account of £99,752 16s. 5d.

Dividends.—The dividends paid by the Company are as follows: No. 1, declared November 1887 (5 per cent.), £2,100; No. 2, declared January 1889 (10 per cent.), £4,700; No. 3, declared March 1889 (10 per cent.), £4,700; No. 4, declared January 1893 (10 per cent.), £10,000; No. 5, declared December 1893 (15 per cent.), £15,000; No. 6, declared June 1894 (30 per cent.), £30,000; No. 7, declared December 1894 (25 per cent.), £25,000; No. 8, declared July 1895 (25 per cent.), £25,000—£116,500. A further dividend of 30 per cent. has since been declared, involving £30,000, which will be brought into account in the next half-year.

Working Expenses.—Following are the working expenses, per ton, compared with last half-year:—

	Half-Year 31st July, 1895.	Half-Year 31st January, 1896.
	s. d.	s. d.
Mining	8 11.76	11 1.55
Hauling and Pumping ..	2 9.35	3 2.68
Transport to Mill ..	0 6.25	0 6.11
Milling	6 11.74	7 1.82
Charges	0 8.56	1 1.62
	19 11.66	23 1.78

Mine Development.—During the Half-Year £9,594 12s. was expended on Mine Development, and the sum of £10,360 12s. written off for ore mined; the amount now standing to Debit of this account is £22,592 19s. 5d. The tonnage developed is reported by the Manager to be 151,698 tons, or an increase for the period under review of 19,298 tons, while the amount to Debit is £766 less than at 31st July, 1895. The Mine Surveyor's certificate attached gives the Ore Reserves as 173,118 tons. The difference between this and the figures given by the Manager is the allowance made by him for unpayable rock.

Milling.—During the half-year the 100 Stamp Mill crushed 51,749 tons of ore, yielding 23,919.35 ozs. of Smelted Gold and Concentrates equal to 3,926 ozs. of gold, or an average of 10.761 dwts. per ton (exclusive of return from Cyanide Works), value £1 18s. 6.32d., an increase of 2s. 0.03d. compared with the previous six months.

Cyanide Works.—The Cyanide Plant treated 33,593 tons of sand, yielding 6,101.80 ozs. of gold or an average of 3.632 dwts. per ton, value 10s. 10.78d.

Machinery and Buildings.—These have been maintained in good order. A new Boiler Plant has been erected at the Mill in place of the old plant, which was showing signs of decay, and by this a great saving in the consumption of coal is effected.

Mine.—The Manager's Report gives full details of the work done for the period under review.

Depreciation.—No depreciation has been written off for the half-year, the Board having decided to write this off annually.

Native Labour.—This question has been a source of great anxiety to your Board. During the period under review the native staff has decreased to such an extent that at January the Company required a further 500 "boys" to make a full complement. Agents have been sent to different districts with a view to increasing the labour supply, but very little benefit has been derived therefrom. Under the above circumstances it has been necessary to use the rock drills in stopping, thereby breaking a quantity of waste rock with the reef, which was put through the mill, the labour being insufficient for sorting purposes, hence the decrease of gold production as compared with the previous six months.

MANAGER'S REPORT.

Doornfontein, January 31, 1896.

To the Chairman and Directors, "The Jumpers" Gold Mining Company Limited.

Gentlemen,—Herewith I beg to hand you my Report on the operations of this Company for the Half-Year ending January 31, 1896.

Mine.—Development.—The following development, viz., driving, rising, cutting out, and sinking, has been done at the various levels, as follows:—West Mine: Second level driven 113 feet; third level driven 81 feet; fifth level driven 145 feet; seventh level driven 97 feet; rises from second to first level, 20 feet; rises from third to second level, 13 feet; winzes from third to fourth level, 14 feet; winzes from fourth to fifth level, 93 feet; main incline shaft, 201 feet 6 ins. East mine: first level driven 20 feet; fourth level driven 53 feet; fifth level driven 295 feet; sixth level driven 593 feet 6 inches; seventh level driven 388 feet; winzes from third to fourth level, 16 feet; winzes from fourth to third level, 22 feet; winzes from fifth to sixth level, 203 feet; winzes from sixth to seventh level, 68 feet; total footage for half-year, 2,436 feet.

Ore Reserves.—There are 146,882 tons of rock developed and available for stopping; 700 tons broken and lying in stopes, and 4,116 tons at grass, making a total of 151,698 tons of pay rock in sight. The developed rock is situated as under: West mine, 2nd level, 1,843 tons; west mine, 3rd level, 1,211 tons; west mine, 4th level, 19,122 tons; west mine, 5th level, 8,327 tons; west mine, 7th level, 6,075 tons. East mine, 3rd level, 1,780 tons; east mine, 4th level, 11,402 tons; east mine, 5th level, 65,537 tons; east mine, 6th level, 26,537 tons; east mine, 7th level, 5,048 tons; dumped and lying on surface, 4,116 tons; broken and lying in stopes throughout the mine, 700 tons—total, 151,698 tons.

Development.—West Mine, 2nd Level.—North Reef west of Main Cross-cut, 113 feet of drifting has been done, the lode averaging about 2 feet in width and of fair quality. North Reef, Rise No. 3 West, risen through to 1st Level. 3rd Level.—North Reef, west of Main Cross-cut, 81 feet driven. Lode 2 feet wide. Winze No. 4 west, sunk through to 4th Level. 4th Level.—Winze No. 4 west has been sunk 93 feet towards the 5th Level. 5th Level.—Main Reef West Drift 88 feet driven. Lode 12 inches wide. North Reef, west of main cross-cut, 57 feet of drifting and cross-cutting has been done. Lode 2 feet wide. Platt or Station at Main Incline Shaft cut out, two Ore Bins have been built, and are now working. This shaft is being operated by an 8 x 5 air hoist and two 16 foot skips. Main incline shaft sunk 97 feet 6 inches towards the 7th level. 7th level.—Main Reef driven east 81 feet. Lode 2 feet wide. Have started to cut out station at this level. Main incline shaft sunk 104 feet towards the 8th level. East Mine, 3rd level.—Middle reef, winze No. 6 west, sunk through to 4th level. Lode 12 inches wide. 4th level.—Middle reef, rise No. 7 west, risen 22 feet towards the 3rd level. Middle reef, west of main cross-cut, driven 53 feet. 5th level.—North Reef, driven 15 feet. North reef, winze No. 6 west, sunk through to the 6th level. Middle reef, west of main cross-cut, driven 263 feet 6 inches. Main reef, winze No. 5 west, sunk through to 7th level. 6th level.—Main reef, east and west drifts, extended 143 feet. Average width of lode 3 feet. Cross-cut No. 1 west, driven 30 feet to intercept north reef. Winze No. 1 east sunk through to 7th level. Winze No. 1 west sunk through to 7th level. 7th level.—Main reef, east and west, have been driven 227 feet. Main incline shaft has not been sunk below this level during the half-year. Cross-cut No. 1 west, driven 28 feet to intersect main reef.

Surface Works at Mine.—Permanent Buildings: A dynamo house has been built adjoining smith's shop. The compound has been

enlarged. All buildings have been maintained in good condition. —Tree planting: 3,000 trees have been planted out at the mine.

Machinery and Plant at the Mine.—Hauling and pumping and rock-drilling plant in good working order. Electric lighting plant maintained efficiently, and one dynamo by Ellwell-Parker has been purchased, in conjunction with a Roote's blower for operating the smith's shop. One new 4-inch plunger pump at east main shaft. Tram-line plant in good order, and 33 new trucks added to the stock. Breaker-station and plant in good order. 100-Stamp battery in fair working order. A new stationary boiler plant has been erected during the half-year, and is now at work. The old portable plant was showing signs of decay, and besides, the consumption of coal was very heavy. All machinery in connexion with the battery is in satisfactory condition. The average running during the half-year has been 100 stamps working 151 days. The total amount of ore crushed has been 51,749 tons, which yielded 30,021.15 ounces smelted gold, an average of 11.602 dwts. per ton of 2,000 lb., exclusive of 1,440 tons of concentrates produced, averaging 54,527 dwts. per ton, and estimated to yield 3,926 ounces gold (as per table attached hereto). Vanner plant continues in good condition. The 10,000 ton cyanide plant has been in continuous work during the half-year. One zinc-cutting machine added to plant. Pumping station in good condition. Permanent buildings at battery—Men's quarters have been extended by the addition of four new rooms; one married man's quarters erected—being a cottage and four rooms; new Kaffir quarters built for natives at cyanide works; also new boiler shed erected. Existing buildings in good repair. Dams in good condition and well stored with water.

Remarks.—The mine is looking quite as well as usual, although the yield of gold for the past half-year has proved disappointing; this was entirely owing to the scarcity of native labour for stopping purposes, and having to put in machine drills instead, which had the effect of breaking the waste rock so fine that sorting could not be so effectively carried out; and besides this, everything available in the shape of crushing rock was run through the mill; our labour being so short the usual care in breaking and selecting the rock could not be exercised, and then during January of this year the unsettled state of affairs had the effect of shutting our mine down for half the month, and in other ways retarded our operations. I have prepared tables I., II., and III., showing respectively the mill returns, analysis of working expenses, and details of development, which are annexed hereto.—Yours faithfully, A. H. Morrisby, General Manager.

Table I.

	Milling Returns from August 1, 1895, to January 31, 1896.	
	Days. Stamps. Tonnage. Smelted Gold.	
1895—August ..	29 .. 100 .. 10,622 ..	4,656.85 ounces
September ..	28 9,605 ..	4,849.00 "
October ..	28 9,227 ..	4,671.45 "
November ..	27 9,043 ..	4,150.65 "
December ..	24 7,961 ..	3,325.00 "
1896—January ..	15 5,291 ..	2,266.40 "
Totals ..	151 .. 100 .. 51,749 ..	23,919.35 "

Average per ton—9.244 dwts., value £1 14s. 2.45d.

Cyanide Returns from August 1, 1895, to January 31, 1896.

	Tons treated. Smelted Gold.	
1895—August ..	7,297 ..	1,650.00 ounces
September ..	5,765 ..	1,046.35 "
October ..	6,066 ..	1,120.60 "
November ..	6,102 ..	1,043.90 "
December ..	5,230 ..	812.85 "
1896—January ..	3,133 ..	428.10 "
Totals ..	33,593 ..	6,101.80 "

Average per ton Sand treated—3.632 dwts., value 10s. 10.78d.

Do. Ore crushed—2.358 dwts., value 7s. 0.86d.

Concentrates produced from 1st August, 1895, to 31st January, 1896.

	Tons produced. (Estimated)	
1895—August ..	315 ..	773 ozs.
September ..	239 ..	592 "
October ..	232 ..	564 "
November ..	270 ..	764 "
December ..	255 ..	823 "
1896—January ..	129 ..	410 "
Totals ..	1,440 ..	3,926 "

Average per ton Concentrates—54.527 dwts., value £7 15s. 4.125d.

Ore per ton crushed—1.517 dwts., value 4s. 3.872d.

Summary of Extraction.

	9.244 dwts., value £1 14 2.450	
Mill	2.358 ..	0 7 0.896
Cyanide	11.602 ..	2 1 3.346
Concentrates (untreated)	1.517 ..	0 4 3.872
	13 119 ..	£2 5 7.218

Table II.—Analysis of working expenses, from August 1, 1895, to January 31, 1896: Mining, 11s. 1.552d.; hauling and pumping, 3s. 2.681d.; transport to mill, 0s. 11.15d.; milling, 7s. 1.819d.; charges, 1s. 1.621d.; mine redemption, 4s.; Cyaniding, 33,593 tons, 3s. 10.888d.; total, £1 11s. 0.676d.—Recapitulation: Quartz won and milled, and yield and value of gold since formation of company to January 31, 1896—won, 527,487 tons; milled, 526,351 tons; yield, 270,203 ounces; value, £980,658 6s. 2d.

Table III.—Details of mine development, from 1st August 1895, to 31st January 1896. Expended during half-year: Total number of feet driven, 1,765 feet 6 inches; total number of feet sunk, 670 feet 6 inches. Cost £9,594 12s. Redeemed during half-year: Ex 3rd level, 1,218 tons; ex 4th level, 8,379 tons; ex 5th level, 35,284 tons; ex 6th level, 9,722 tons, at 4s., £10,360 12s.—credit, £766. Recapitulation.—Second level at 31st July 1895, £493 3s. 10s.; fourth ditto, £1,850 17s. 4d.; fifth ditto, £11,056 13s. 8d.; sixth ditto, £7,225 9s. 9d.; seventh ditto, £2,732 14s. 10d.—£23,358 19s. 5d. Plus expended during half-year, £9,594 12s.—total, £32,953 11s. 5d. Minus redeemed during half-year, £10,360 12s. Grand total, £22,592 19s. 5d.

February 7th, 1896.

To the Secretary, "The Jumpers" Gold Mining Company Limited.

Dear Sir,—I hereby certify that I have measured up the ore reserves with the following results:—West Block: main reef, 31,103 tons; north reef, 16,230 tons. East Block: main reef, 61,870 tons; middle reef, 18,946 tons; north reef, 44,969; total, 173,118 tons.

TENDERS FOR 10,000 TONS OF COAL.—The Dolcoath Mine Company, Camborne, Cornwall, are prepared to RECEIVE TENDERS for 10,000 TONS OF BEST STEAM COAL to be supplied at the rate of about 1000 tons per month, for the year ending June, 1897.

Tenders to quote for two classes of Coal to be used for steam boilers—viz., "Screened Coal" and for "Through and Through Coal," with the option to the Company to accept either or both in such proportion as they may elect.

Tenders to correctly describe the Coal, and to state as to the "Screened Coal" the gauge of the screen over which the coal is to be well screened, and as to the "Through and Through Coal" the percentage of small coal which will pass through a screen of a stated gauge.

Tenders to give the analysis of each class of coal and to state the percentage of foreign substances, including ash, which it will be guaranteed shall not be exceeded for each class.

Tenders to include the delivery of the coal F.O.B. at any Shipping Port to be mentioned, or C.I.T. at Hayle or Portreath, and to be marked "Tender for Steam Coal," and directed to the Secretary, Dolcoath Mine (Limited), Camborne, Cornwall.

Tenders must be sent in not later than Wednesday, the 3rd June. The Directors do not bind themselves to accept the lowest or any tender.

By Order of the Board.

F. W. THOMAS, Secretary.

Dated 23rd May, 1896.

C. PASS & SON (Limited), BRISTOL,
 ARE BUYERS OF
 LEAD ASHES, SULPHATE OF LEAD, LEAD SLAGS,
 ANTIMONIAL LEAD, COPPER MATTE, TIN ASHES, &c.
 and DROSS or ORES containing
 TIN, COPPER, LEAD, AND ANTIMONY.

LAMBERT'S WHARFAGE CO.,
PRINCE OF WALES DOCK, SWANSEA.
 Ores, Mattes, Regulus, and Bars received and prepared for market.
 Copper, Lead, Tin, Spelter, and Pig Iron Received, Weighed, and
 Sampled, and Warrants issued against same.
 N.B.—Warrants are on Accepted List of London Metal Exchange.
 Regular lines of steamers from America, Europe, &c.
 Good prices can be obtained for low produce Copper Ores. Send
 air samples of not less than half a pound.

THE AUSTRALIAN GOLD RECOVERY
COMPANY (Limited).
 (MACARTHUR-FORREST PROCESS).

All information and terms regarding Plants and the Licensing of
 this Process can be obtained on application to:
THE AUSTRALIAN GOLD RECOVERY CO. (Ltd.),
 23, College Hill, London, E.C.
JAMES R. FOWLER, Esq., 14, King William Street
 Adelaide; or
GORDON WILSON, Esq., The Australian Gold Recovery Com-
pany (Limited), Charters Towers, North Queensland.

AGENTS FOR THE CASSEL GOLD EXTRACTING COMPANY'S
 MANUFACTURES OF HIGH GRADE CYANIDE.

COAL FIELDS OF THE NORTH-WEST
OF CANADA.

THE UNDERSIGNED would be glad to correspond with YOUNG
 MEN with CAPITAL open to develop the above.
 Samples and full particulars may be seen at the office of this
 Journal.

W. HENRY, 24, Smith Street, Winnipeg, Canada.

PLACER GOLD FIELDS OF ECUADOR.
PLAYA DE ORO MINING COMPANY.

AT the request of certain English stockholders, we have
 arranged to keep in constant telegraphic communication
 with the head office of this company in New York, and can furnish
 full information and the latest reports regarding these mines, and,
 if desired, can cable any inquiry for immediate reply.

MAGUIRE, BAUCUS, and STAPLETON,
 Dashwood House (Ground Floor),
 9, New Broad Street, London, E.C.

COMPANIES AND LEGAL ANNOUNCEMENTS.

*. Advertisements are inserted in this column at the rate of
 9d. per line, with a minimum charge of 7s. 6d.

THE CAPE COPPER COMPANY (LIMITED).
 9, Queen Street Place,
 London, E.C.,
 May 27, 1896.

NOTICE IS HEREBY GIVEN, that at a MEETING of the
 DIRECTORS of this Company,

IT WAS RESOLVED:

"That a dividend of 2s. per share be declared on the Com-
 putative Preference and Ordinary Shares, free of Income Tax,
 payable on the 1st day of July, 1896, to the Shareholders on
 the Books of the Company on the 5th of June, 1896, and
 that the Transfer Books be closed during the said 5th of
 June, 1896."

Preference Coupons No. 9 and Ordinary Coupons No. 21 will be
 paid at the above rate, free of Income Tax, on presentation at the
 Company's Office.

By Order of the Board,
J. C. LEAVER, Secretary.

THE PESTARENA UNITED GOLD MINING
COMPANY (LIMITED).
 TEN PER CENT. MORTGAGE DEBENTURES.

NOTICE IS HEREBY GIVEN, that the Coupon Number 37 of
 the TEN PER CENT. MORTGAGE DEBENTURES of this
 Company, due on the 1st June, 1896, will be paid on presentation
 at the Office on or after that date.

By Order of the Board,
RICHARD GARLAND, Secretary.
 Office: 7, Queen Street Place, London E.C.,
 29th May, 1896.

NERBUDDA COAL AND IRON COMPANY
(LIMITED).

NOTICE IS HEREBY GIVEN, that the THIRTY-SIXTH
 ORDINARY GENERAL MEETING of the Company will be
 held at the Offices of the Company, 213, Gresham House, Old Broad
 Street, London, E.C., on MONDAY, the 8th June next, at 12 o'clock
 noon, for the transaction of the General Business of the Company,
 including the Election of Directors and Auditor.

The Transfer Books will be closed from Saturday, the 30th May,
 to Monday, the 8th June next, both days inclusive.

By Order of the Board,
FREDK. B. BLUETT, Secretary.
 213, Gresham House, Old Broad Street, E.C.,
 May 28, 1896.

COLONIAL BANK.

(Incorporated by Royal Charter, 1836.)

Subscribed Capital ... £2,000,000
 Paid-up ... £600,000
 Reserve Fund ... £150,000

THE Court of Directors of the Colonial Bank hereby give
 notice that, in pursuance of the provisions of the Charter, a
 HALF-YEARLY GENERAL MEETING of Proprietors will be
 held at the Bank House, No. 13, Bishopsgate Street Within, London,
 E.C., on THURSDAY, July 2nd, 1896, at Two o'clock precisely, to
 receive the Report of the proceedings of the Corporation.

The Transfer Books of the Corporation will be closed on
 June 13th, 1896, and reopened on July 10th, 1896.

By Order of the Court of Directors,
EDWARD CARPENTER, Secretary.
 13, Bishopsgate Street Within, London, E.C.,
 29th May, 1896.

HENRY WIGGIN & CO. (Limited),
NICKEL AND COBALT REFINERS,
 MAKERS OF BEST RED LEAD FOR FLINT GLASS
 MANUFACTURERS,
BIRMINGHAM.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

An Illustrated Record of Mining, Metallurgical, Railway,
 Financial, Industrial, and Engineering Progress.

ESTABLISHED IN 1835.

THE MINING JOURNAL, RAILWAY AND COMMERCIAL
 GAZETTE, published every SATURDAY MORNING, price
 SIXPENCE, is recognised throughout the World as being the oldest,
 most influential, and most widely circulated Journal devoted to the
 interests which it represents. It circulates

ALL OVER THE WORLD.

Amongst Mine Owners, Capitalists, Investors, Mining, Metallurgical
 Engineers, Manufacturers, &c. &c.

THE MINING JOURNAL, RAILWAY AND COMMERCIAL
 GAZETTE has correspondents and sources of information in almost
 every quarter of the globe. Its policy is absolutely independent;
 its circulation is cosmopolitan.

THE MINING JOURNAL is neither controlled, nor is any
 interest in it held or exercised, by any mine owner, speculator,
 or syndicate; and it is in no way connected with any share-
 dealing agency.

TO CORRESPONDENTS.—Letters on Editorial Matters, or containing
 literary contributions should be addressed to "THE EDITOR." All matter
 intended for insertion must be written on one side of the paper only. The
 return of rejected manuscripts cannot be guaranteed. The Editor invites
 correspondence and items of news or information from readers in all parts
 of the World.

TO SUBSCRIBERS.—The Annual Subscription to THE MINING
 JOURNAL, including postage, is for:—

The United Kingdom, £1 4s.;

Abroad, £1 8s.;

payable half-yearly in advance. It can be purchased at all Railway Book-
 stalls and Newsagents throughout the United Kingdom for 6d.

TO ADVERTISERS.—The following is an abbreviated Scale of Charges for
 Advertising:—Companies' Prospectuses, £12 12s. per column, or £30
 per page; Companies' Legal Announcements, 3d. per line, with a Min-
 imum charge of 7s. 6d.; Sales by Auction, Publications, For Sale, Wanted,
 &c., &c., 8d. per line with a Minimum charge of 4s.

Displayed (Trade) Advertisements of 2 inches in depth (or more), Single
 Column measure, will be inserted at the following rates:—For 52 inser-
 tions 2s. 6d. per insertion for each inch in depth; for 13 insertions 3s.
 per insertion for each inch in depth; for 13 insertions 3s. 6d. per inser-
 tion for each inch in depth. Terms for special positions and contracts may be
 had on application.

*. ADVERTISEMENTS (which should in all cases be sent direct to
 THE BUSINESS MANAGER) can now be received for the forthcoming issue
 of THE MINING JOURNAL, RAILWAY AND COMMERCIAL
 GAZETTE, on FRIDAY, at 13, FINCH LANE, E.C., up till 6 p.m., and
 at 3, DORSET BUILDINGS, SALISBURY SQUARE, E.C. until 9 p.m.

Editorial and Advertisement Offices:
18, FINCH LANE, LONDON, E.C.

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LONDON: MAY 30, 1896.

THE COAL MINES REGULATION ACTS.

THERE are at the present moment in existence two Bills
 that have been brought in to amend the existing Coal
 Mines Regulation Act, the careful study of which is
 imperative upon all interested in coal mining in this country.
 The first and longer Bill was brought in during February by
 several members, who are more especially supposed to repre-
 sent the miners' interests in the House of Commons; whilst
 the second and shorter Bill was backed by no less a person than
 the Home Secretary. In this case it may be said that the less
 includes the greater, because the second Bill really contains all
 the more important provisos of its longer predecessor; besides
 which there is no comparison between the relative probabilities
 of the acceptance by the House of the two Bills. It is one of
 the most interesting characteristics of our governmental
 system that the merits or demerits of a Bill have nothing
 practically to do with its becoming law. A member votes for or
 against a measure, not because of its intrinsic goodness or
 badness, but because it may benefit or damage his party. The
 real or fancied interests of the nation sink into insignificance
 compared to those of the legislative party. We are, accord-
 ingly, not quite sure whether the fact that a number of clauses
 of both the Conservative and the Radical Bills is identical, can
 be taken as any evidence of an inherent probability that they
 will be beneficial to the country. As, however, these clauses are

the most likely to become law, it may be well to turn our atten-
 tion to those in the first place.

There are several alterations in the provisions that regulate
 the appointment of a check-weigher; the power to appoint a
 deputy to take the place of the check-weigher when the latter
 is absent or incapable from any cause of performing his duties
 is one that ought evidently to be given to the men. It removes
 a cause for complaint, and may obviously protect them against
 injustice, for if they are entitled to have a check-weigher at all, they
 are surely entitled to have one always on the spot. Similarly,
 no one will complain of the provision that the check-weigher
 shall be enabled to do his work in such comparative comfort as
 may ensure his doing it properly. The collieries at which the
 check-weigher is not provided with the conveniences which the
 new Act calls for, are few indeed, and there is no reason why
 these should not be compelled to furnish them, even in their
 own interests. There are a few individuals about a colliery who
 do more towards fomenting discontent amongst the men, or, on
 the other hand, towards allaying any friction that may arise,
 than can the check-weigher, and coal owners ought to have the
 wisdom to see that this important functionary is made com-
 fortable, even if it were only for the sake of promoting all-
 round harmony. A recent lawsuit has demonstrated, even if it
 did not suggest, the importance of defining the appointment of
 a check-weigher by more precise regulations than has hitherto
 been the case.

Both Bills are agreed that no safety lamps are to be used
 except they be the property of the owner of the mine, and that
 no part of the lamp shall be removed whilst the lamp is in
 regular use. This rule is intended to put a stop to the practice
 that prevails in certain districts of miners providing their own
 safety lamps, and of miners taking the upper part of their
 lamps, glass, gauze, chimney, &c., home with them to be cleaned.
 It proceeds on the obvious assumption that the coal owner will
 be more careful to see that a safe type of lamp is used, and that
 it is properly cleaned and not damaged in the cleaning, than the
 miner himself would be, who has to use the lamp. The assump-
 tion is very likely true, and, if so, affords a curious commentary
 on the mental characteristics of our coal miners. At any rate,
 no one is likely to object to the rule, unless, indeed, it is found
 that miners become so careless with their employer's lamps as
 to cause the expense under this head to become excessive, in
 which case, however, as the Bill now reads, there is nothing in
 it to prevent the owner from making the miner pay for his lamp
 as long as it is the owner who provides it.

We look upon the provision by which clay or some other non-
 inflammable substance shall be provided by the owner for use as
 tamping as a very important one indeed. In spite of the pre-
 sent Act, which forbids the use of coal dust for tamping, no one
 who has been much in coal mines, and kept his eyes open, can
 have failed to see that a large amount of coal dust is so used.
 The general practice now is to gather up any earthy matter that
 may be handy, from the floor of the working place or near by,
 and this, if not indeed pure coal dust, can rarely fail to con-
 tain a notable proportion of that dangerous substance. We
 must take the coal miner as we find him, and we know only too
 well that he is not going to take a little immediate trouble to
 avoid what he would consider the remote contingency of an
 accident; therefore, the only way to make him discontinue the
 use of the dangerous article is to make it incumbent on the mine
 owner to provide him with a safe one without trouble to him-
 self, and that is what this new provision contemplates. We
 hope, however, that the wording of the Act will be so chosen as
 to make it clear that such substances as wet moss may be
 included amongst the "non-inflammable" substances that are
 allowed to be used for tamping. Recent experiments on the Con-
 tinent have shown that wet moss in particular exerts a very
 strong influence in quenching the flame from an explosive
 tamped with it.

Both Bills have adopted identically the same expansion of
 the first part of Section 39 of the old Act, by which it was
 enacted that the plan of an abandoned mine shall be sent to the
 Home Secretary's office. The new rule defines what is to be
 shown on this plan—namely, the working faces, winning head-
 ways, pillars of coal remaining unwrought, position, direction,
 and extent of all faults and dislocations, &c., of the seam,
 together with some general geological information. It is a
 matter of prime importance, both scientifically and technically, that
 such data should be collected and preserved, and the proposed
 alteration will, no doubt, be cordially approved by all, whether
 geologists or miners, as far as it goes. It stops short, however,
 in a most provoking manner, and in one that is not calculated
 to increase our respect for the wisdom of our legislators. It is
 evident that the whole value of such a mine plan depends on its
 being accurate, and that an inaccurate plan would be much
 worse than none at all. Yet the only provision made for
 securing this all-important qualification, which alone can pre-
 vent the new rule from doing infinitely more harm than good,
 is the feeble proviso that the plan shall be "either the original
 working plan or an accurate copy thereof made by a competent
 draftsman." It is not quite clear whether it is the "competent
 draftsman" who is to make the original plan, or whether he is
 only to make the copy. In either case the proviso is ludicrously
 insufficient. If this clause is ever to be of the slightest value,
 it must be reinforced by another in which it shall be enacted
 that the plan must in every case be made by a competent
 surveyor who shall have passed a special examination in mine
 surveying, and shall hold a certificate as a mine surveyor. It is
 really high time that this matter received some attention.
 Some lives, and at times a good many, are sacrificed both in coal
 and metal mining every year, because workings are laid out in
 accordance with some survey that turns out afterwards to be
 wrong. Driving into old workings is a well-known and gene-
 rally acknowledged source of danger, and the Act now
 in force contains rules respecting the precautions to be
 taken when approaching old workings, but the know-
 ledge of the whereabouts of these old workings is
 left pretty much to chance, to the chance whether the surveyor

CALIFORNIA DURING 1895.

IT was only in December last that we had occasion to draw attention to the mineral output of California during 1894, which reached us through the medium of the California State Mining Bureau, and which gave very forcible evidence of the progress made by the industry throughout the whole of the State. In our comment upon these statistics we complimented the Bureau upon the excellent work it was doing, and upon its energy and promptitude in making the world acquainted with the achievements of California, and at the same time we lamented that so excellent an example was not generally imitated by other countries, of whose outputs we desire an early and complete knowledge. In publishing the figures for 1895 the Bureau has shown much greater promptitude than it displayed last year. The statistics reached us during the week as Bulletin No. 8 of the Mining Bureau, and are commendably complete. These figures, we are gratified to see, entirely bear out all that we have said from time to time respecting the mining industry of California, and prove at a glance that it is progressing slowly, but, in all likelihoods, only the more surely. The total product of the State for the past year amounted to \$22,844,684, against \$20,203,294 in 1894, showing an increase of \$2,641,370. Gold, of course, is more abundant in California than any other metal, and hence it accounts for a considerable part of the increase. Gold accounts for \$1,411,035.69 of the increase, and silver for \$302,458.15, or a total of \$1,713,493.85, and this goes far to support our contention that, in its output of gold, California is again destined to make itself conspicuous. The following table gives the statistics of the other minerals found throughout the State:—

Antimony, 33 tons	\$ 1,485.00
Asbestos, 25 tons	1,000.00
Asphaltum, 25,525 tons	170,500.00
Bituminous rock, 38,921 tons	121,586.00
Borax, 5959 tons	595,500.00
Cement, 16,283 barrels	32,558.00
Chrome, 1740 tons	16,795.00
Clays—Bricks, 131,772 M., \$672,360; pottery uses, 37,660 tons, \$39,685	712,045.00
Coal, 79,858 tons	193,790.00
Copper, 225,650 lbs.	21,900.00
Gold	15,334,317.00
Granite, 288,449 cubic feet	224,329.00
Gypsum, 5158 tons	51,014.00
Lead, 1,592,400 lbs.	49,364.00
Limestone—Lime, 394,764 barrels, \$386,094; lime rock, 71,355 tons, \$71,640	457,734.00
Macadam, 840,650 tons	700,987.00
Magnesite, 2200 tons	17,000.00
Manganese, 880 tons	8,200.00
Marble, 14,864 cubic feet	56,566.00
Mineral paints—Copper, 250 tons, \$2250; iron, 225 tons, \$3375; ochre, 375 tons, \$2800	8,425.00
Mineral waters, 701,397 gallons	291,500.00
Natural gas—Carbonic acid, \$12,000; fuel gas, \$100,000	112,000.00
Onyx, 1200 cubic feet	112,000.00
Paving blocks, 2232 M.	12,000.00
Petroleum, 1,245,339 barrels	1,000,235.00
Platinum, 15 ounces	900.00
Quicksilver, 36,104 flasks	1,337,131.00
Rubble rock, 414,038 tons	394,952.00
Salt, 53,031 tons	150,576.00
Sandstone, 55,242 cubic feet	35,373.00
Serpentine, 4000 super. feet	4,000.00
Silver	599,789.70
Slate, 1350 squares	9,450.00
Soapstone, 25 tons	375.00
Soda, 19,000 tons	47,500.00

* The tonnage throughout is of 2000 lbs.

NOTES AND COMMENTS.

THE future of the deep levels of the Rand is a question which is still agitating the mind of the investor, more so as first experiments have not proved eminently satisfactory. The Crown Deep is a property upon which development is proceeding vigorously and rapidly. It consists of 191 claims, and is exploited and developed from two shafts. In No. 1 shaft the south reef was struck, according to the *Standard and Diggers' News*, some time ago at a depth of 904 feet, the dip of the reef being about 30°. The strike was not very gratifying in some respects, the reef being only 6 inches wide, although it assayed about 28 dwts. At a depth of 998 feet the main reef leader was struck, which proved to be 4 inches wide, and gave the highly satisfactory return of 9 ounces 11 dwts. Immediately beneath the leader the main reef was struck, which was about 7 feet wide, and returned about 9 dwts. In No. 2 shaft the south reef was struck at a depth of 1150 feet, which was found to be 14 inches wide, and assayed 4 ounces 13 dwts. In No. 1 shaft there are four levels, and they have now reached a depth of 280 feet on the incline beneath the 1000 feet level, the incline being sunk at an angle of 30°. Altogether some 10,000 feet of development work has been done, which has exposed about 200,000 tons of ore, 40,000 of which are at grass. It is anticipated that milling operations will commence at the beginning of next year, and should development proceed at its present rate, there should then be 600,000 tons of ore exposed, and 100,000 tons at grass. The prospects, therefore, are very hopeful.

We would ask our readers to carefully weigh the information which our South Australian correspondent sends us this week, and if it does not convince them that South Australia deserves

more attention than is bestowed upon it, then, we think, nothing will convince them. This colony is not ignored because demonstrative evidence has not been furnished us of its richness. There are districts in this portion of the Continent as rich as many districts in Western Australia. Besides this, new discoveries are taking place almost daily, evidencing that abundance of wealth is awaiting the enterprising adventurer. By this time our readers are pretty well acquainted with the richness of Wadnamings, for instance. Our correspondent again sounds its praises in his letter, and to show that his opinion is not unsupported, we quote the following from a letter in the *South Australian Register*, which reached us by the same mail:—"Progress' Wadnamings, referring to the mining industry, writes:—Since the discovery of gold in Western Australia tens of thousands of pounds have been invested there by South Australian capitalists and others. I maintain that there are equally as good chances in South Australia for investment in mining ventures as there are in Western Australia. For instance, I will take the Wadnamings district. The New Milo Gold Mine, under able and economical management, is giving fair returns—last yield over an ounce per ton. The Taltabooka samples have assayed well; while there are also other properties in the locality which, with able and economical management and proper appliances, would become dividend-paying. The Victoria Towers property, which had to be closed down, owing to want of machinery, has opened well. The main shaft on the underlay has been sunk to a depth of over 400 feet, and the ground generally opened up for breaking ore at once. The reef, which runs from 2 feet to 4 feet thick, yields from 15 to 16 dwts. per ton on an average. There are other properties in close proximity to the above well worthy of a trial, and it is only capital that is required to make them dividend-paying."

THE cautious and well-judged policy which, as was evident from Colonel Hughes-Hallett's speech at yesterday's meeting, the directors in the Elandsfontein No. 2 Gold Mining Company are pursuing, found a fitting recognition in the cordial unanimity characterising the attitude of the shareholders, and in the vote of thanks which was heartily accorded to the board of direction. The directors have, in fact, every encouragement to proceed with the greatest prudence in the development of the property under their control, since, as is evident from the discoveries which have been made in the adjoining mine, there are several valuable reefs only waiting discovery, and likely to yield satisfactory profits when once opened up. At the same time their action has not been characterised by any undue laxity or temerity. Already—at an early stage in the career of the new company—arrangements have been made for a systematic attack upon the resources of the property. A mine manager has been engaged, who, in addition to the ordinary technical ability which one has a right to expect from a man in his position, is exceptionally qualified for the task he has undertaken, since he has gained experience obtained in the management of the neighbouring property. In addition to the knowledge that their property is a good one, the shareholders have a right to congratulate themselves upon the economical spirit which has entered into the arrangements hitherto made on their behalf. By the well-advised rejection of a proposal that they should pay £500 for a problematical advantage—an advantage which circumstances have shown they were able to obtain at a much lower figure—the board have earned the right to be regarded as careful and far-sighted custodians of the company's interests, and their tact and businesslike ability, applied to the development of a property generally held to be of solid value, should not fail to make of the concern such a success as will amply repay the shareholders for having ventured their money upon it.

It is very easy to read encouragement in the circular which the directors in the Continental and West Australian Trust (Limited) have issued to their shareholders. Primarily, it is intended to be a catalogue—but an explanatory catalogue—of the interests in which the members of the Trust are concerned, and the very briefest scrutiny suffices to show that some of them are of a solid and substantial character. There is, for instance, the company's interest in the Hannan's Brownhill Gold Mining Company (Limited), which is generally held to have an assured future, and the 60 acres of gold mining leases held by the company at Southern Cross, with extensive water rights. It is intended that water from a lagoon owned by the company should be conveyed by rail to Southern Cross and Coolgardie, and retailed at, it is thought, a considerable profit. No useful purpose would be served by continuing an enumeration of the interests held by the company, since they will be found fully set forth in another column, but it is difficult to avoid the belief that they are such as to ensure for the company a period of considerable prosperity. It is to be observed that the company's future does not at all rest upon any narrow or limited basis. On the contrary, the many-sided character of the interests held by the company justifies the belief that unless something very extraordinary happens it will be carried to a satisfactory point of commercial success.

THERE is no ground for supposing that the Miners' Congress now sitting will settle any of the crucial points with which they are light-heartedly juggling, but it is impossible not to follow their proceedings with interest. The English delegates contrived to take to themselves a perfectly adequate share in the debates, and as reflecting the main trend of the opinions held by some large sections of the English labour party, their speeches are worth more than a passing notice. It is to be observed that the spirit of union is not so widely diffused among the delegates as might have been anticipated. Notwithstanding their large community of interest which should bind the delegates of different countries, there has been a marked disposition to insist upon certain concessions to nationality, these in some cases being promised as a condition of future attendance. For instance, the German delegate, Herr Moeller, declared quite reasonably that his own delegates would continue

who was employed in making the plans knew his business or not, the onus of the mistake, when there is one, falling upon the manager. This is manifestly unjust. A man may be an excellent mine manager, but no surveyor at all, any more than he need be an engine driver. It would relieve the manager of a great deal of undue responsibility if it were made compulsory on all mine surveyors to pass an examination to prove their fitness for the post. At the same time we do not see that any injustice would be inflicted upon anyone; a few incompetent surveyors might be found out and turned out, but that would be a benefit to all concerned, except the one who deserves no consideration. We hold that the introduction of a regulation allowing no one to practice as a mine surveyor unless he held a certificate, would prove an advantage to mining generally, fully equal and probably superior to any that the new Bill promises.

Both the Bills provide for the extension of special rules to several matters that tend to the personal security of coal miners, such as lamps, nature and mode of using explosives, the watering of dusty mines, and one or two minor precautions.

Both Bills again attempt to give the miners fuller representation in discussing matters under dispute; the Radical Bill wishes to do this by the creation of "Coal Mines' Boards," that are to have supreme authority, over-riding to a great extent that of the Inspectors in the various districts. As this is not in the least likely to become law, we need not discuss the project, which we look upon as ill-advised in very many ways. Like several other clauses in this Bill, it tends to an apotheosis of ignorance, which may, perhaps, be excusable in miners, but not in their leaders. Our Inspectors of Mines are thoroughly conscientious, able, experienced men, and form a body of whom the country may well be proud. It is now proposed that their opinions shall be revised by a board of three, one of whom represents the owners, the second the men, whilst the third, who is to be the Chairman, shall be a person who has never had anything to do with a mine in any capacity whatever. In other words, the casting vote, and, therefore, the decision in intricate points of mining—simple ones would scarcely be submitted to such decision—shall be left in the hands of a man whose sole qualification, according to the Bill, shall be his entire and utter ignorance of the subject. An efficient substitute, truly, for the trained and unbiased judgment of an Inspector of Mines. We do not, however, think that there is the least danger of this proposal being even seriously considered.

The Home Secretary's Bill, on the other hand, contains a proposal that the workmen shall have the right to appoint any person to represent them, to attend and take part in any proceedings incident to any arbitration or appeal in which the men are interested. If they have not this right already, and we confess that we should have thought that the common law of the country practically gives them such right, it is quite certain that they ought to have it. Our only doubt is whether the Bill goes quite far enough, and whether it ought not rather to enact that no arbitration case in which miners are interested shall be decided, unless after a representative of the men has been heard, or has been given an opportunity of appearing. In such matters, when differences arise between employers and men, the latter are necessarily the weaker party, and their rights should be most scrupulously safeguarded.

Another clause of the Radical Bill that presents the same mischievous tendency as the one we have already referred to is a very short one, which enacts that six working miners shall be members of any board for granting certificates as under-manager or manager. This, again, is obviously an attempt to lower the already too low scientific standard of those entrusted with the charge of coal mining operations, and shows all the fear of sound knowledge which the other clause indicated, and which we consider unworthy of the miners' leaders. Our British miners and mine managers do not fall short in manual skill, or in technical and practical knowledge. Where they are deficient, however, especially as compared with their competitors on the Continent, is in scientific knowledge of the principles upon which their difficult art rests, and it is this knowledge that they should be encouraged to acquire. As long, however, as the leaders of the miners constitute themselves the apostles of ignorance, it will be difficult to raise the scientific status of colliery officials. It might be said that these leaders, either having been miners themselves or being much among them, know best what the miners themselves want. This is true; but what the miners want and what is best for them are two fundamentally different things. If anyone doubts the truth of this statement, let him look at the strenuous opposition that the miners are offering to the introduction of safety explosives, although these are admittedly safer than black powder. Having no scientific training, miners are, of course, not capable of appreciating its advantages, and, therefore, undervalue it. We in this country have held our own against other nations, in spite of our great deficiency in this respect, but the struggle is becoming every day more acute, and we have need of all the assistance we can get from every source. It is becoming very high time that this matter of scientific training were receiving closer attention, and we should be glad if the Home Secretary had seen fit to revise the rules respecting the examination for colliery managers' certificates, but in the reverse direction to the opposition Bill, and had insisted that the examination shall be extended so as to cover an elementary knowledge of those sciences which underlie the miners' art, so that it should be impossible for any man to have the management of a colliery unless he had risen above mere empiricism, and had grounded his practical technical efficiency upon the sure basis of a training in elementary scientific principles. We feel convinced that the substitution of a year's training in any acknowledged School of Mines for a year's work underground as a qualification for the manager's certificate would prove of immense value to the managers themselves, to the owners whose interests they represent, and to the entire coal trade of the kingdom. The nation has been gradually finding out that technical education properly applied has a real value; why does not the Government recognise this fact in the most important of the national industries?

to furnish only their own interpreters and lodgings, and cease to publish the report of the Secretary-General, their view being that these costs should be borne proportionately by the different societies represented. The great question for discussion is, of course, the proposed limitation by law of the working day to eight hours, which is intended to include the time spent in going up and down the shaft. It is probable that upon this question there will be a fairly general agreement, although the representatives of some of the northern English counties are expected to accord it the most uncompromising opposition, the view being largely held that the State should not be called upon to interfere, and that the matter should be left to the different labour organisations for settlement in the ordinary channels of political and social agitation. The decisions of the Congress will not, of course, have any finality about them, but they will be read with interest for the light they undoubtedly throw upon the manner in which these important questions are regarded in the different countries represented.

Is marble a mineral? This question, which bears a humorous resemblance to some of the matters which occupy the attention and space of the *Daily Telegraph* during what, in journalistic circles, is known as the "silly season," has just been settled for all time by an American Court. The question arose in rather a peculiar, and in some respects, interesting manner. Some lands upon which marble of a valuable kind was found were claimed by the Northern Pacific Railroad Company, having been selected as indemnity for lands lost within the primary limits of their grant. The question of title was submitted for judgment to the Commissioner of the General Land Office, and by one of the processes familiar enough in litigation, but inscrutable to the lay mind, the question resolved itself into the simple classification of marble as a mineral or otherwise. In delivering judgment the Commissioner said: "From a scientific standpoint there is no question but that marble is a valuable mineral, and it is used for purposes of decoration and for ornamental purposes, making it a marketable material of great value." There is a concise pointfulness about this pronouncement which will recommend it to the ordinary understanding. The only surprising feature about the matter is that the question should have been, even for a moment, in doubt. Marble is assuredly not vegetable, and we never remember to have heard it designated as animal; there seems, then, only to be the third alternative.

A POINT of much interest to geologists has been raised by the alleged discovery in Buffels Mine, South Africa, of an auriferous pebble. The complete absence of gold in the pebbles, which has been established by wide observation, has hitherto led to the belief that the precious metal was found in the interstices alone. A high authority has advanced the view that the pebbles themselves should be crushed, not because there was a possibility that gold might be found in the interior, but because in many cases gold was found to adhere to the outside. This expediency, however, of so doing would seem to be put upon a higher ground by the announcement made in a local paper that a speck of gold was found right in the centre of a pebble that had been broken in half. One or two of the Transvaal papers seem disposed to accept boldly the statement contained in the paper for all it is worth, and to incline towards the view that possibly pebbles would be found to contain gold in fair quantities. This new departure from generally accepted conclusions seems to be of rather a hazardous character, and would require for its general acceptance rather more evidence than one solitary instance in support. In expressing ourselves thus guardedly, we may remark upon the interest with which we should regard any future investigations made with the idea of putting the question beyond doubt.

IN these latter days there is not much to be heard of the old coal famine scare. Formerly there was a great deal of evil prophecy awakened by the enormous proportions of the world's coal consumption, but that has altogether ceased. Notwithstanding the tremendous figures into which a calculation of the enormous quantities consumed in houses, and by rail and steamboats, would run, there is now not much disposition amongst the pessimistic to predict a breakdown of the supply. In truth, there does not seem to be much ground for apprehension in this direction, since nearly every month brings news of fresh discoveries. In England the projected development of a Dover coal field opens a long vista of future possibilities, while the discovery of fresh seams in the established districts of coal working is sufficient evidence, if any were required, that there is no question of the English fields being played out, or any where near it. At the same time the more recently opened up countries are adding in rapidly to the output, and cables are being constantly received stating that fresh discoveries of coal have been made in these districts. According to a contribution submitted by a well-known French geologist to his National Society of Engineers, there is reason to hope that the present French fields may be considerably extended, so that even at home the evil day must be indefinitely postponed.

THE labour difficulty seems to be affecting those concerned with the development of the West Australian gold fields quite as strongly as it has the South African industry, though in a different way. But the curious point which presents itself in connection with the field which has been more recently opened up is that, while men are pouring into the colony in considerable numbers, and are constantly complaining of the scarcity of work and the low rate of wages ruling, on the other hand exemptions are being continually applied for, and cases of the penalty being enforced for the non-fulfilment of the labour conditions are frequently reported. A West Australian correspondent asserts, with no small amount of truth, that it will be impossible to find employment for all the immigrants, while another reason why many of those who have been attracted to the field will find themselves without work is that the majority have had absolutely no experience of mining. Notwithstanding that the market is already overstocked with unskilled labour men, they continue to arrive in large number

only to be disappointed, and to find that they are strangers in a strange land, without the means of earning a livelihood. If this state of things does really exist, how can excuses be found for non-fulfilment of the labour conditions? Doubtless in time the difficulty will be satisfactorily dealt with, but at present the outlook for those who have been attracted to Australia is an exceedingly dreary one. One can only hope that others will profit by the unpleasant experience of the men now vainly seeking work in Australasia; although, no doubt, as long as similar discoveries are made, the labour problem will always present itself, and will have to be solved in the early days of the development of the field.

NOTWITHSTANDING its unfortunate history—which could hardly be supposed to leave it much of a reputation—the mellifluously named Chota Nagpore is again at what some people regard as the starting point for another boom. Advances have reached England to the effect that an attempt is being made to get a company at home to explore this gold field, if so it may accurately be termed. The enterprise, if it be undertaken, will, like many others of the same class, partake wholly of the character of a speculation, since the existence of gold in payable quantities has not yet been placed beyond question, although the country is known to be auriferous in parts. That quartz reefs carrying gold in fair quantities do exist in this locality is said to have been ascertained beyond all doubt by the trial shafts which the Bengal Gold and Silver Company have put down in Anandpore. The discovery was made just at the right moment, for the disappointments which have hitherto been encountered might well have led to the abandonment of the whole enterprise, while if Chota Nagpore is ever—as we wish rather than expect—to take a place among productive gold fields, now is certainly the time. The tide in mining affairs is now set strongly in favourable directions, and if missed at the flood may well give place to a future of "shallows and miseries." It is, moreover, rendered more important by the fact that it is expected to lead to even more crucial developments in the future by indicating the character and trend of the ground with which the local miners have to deal. Those who have made a study of the conditions prevailing in Chota Nagpore deny alluvial washing as unremunerative, the natives themselves being unable to eke out a subsistence all the year round, and wisely insist that permanently successful mining must be conducted systematically and with method. But it is necessary, though we would much rather avoid pessimistic utterances, to advise that a liberal discount should, in view of past occurrences, be struck from the forecasts of local patriots, who are excusably inclined to put the best possible construction upon local mineralogical manifestations.

THERE is a regrettable but easily comprehensible propensity now abroad to forget that Australasia's title to be called a continent of mineral wealth rests on a broader foundation than the discovery and development of gold reefs. Where the precious metals are to be had in abundance, industrialists may be excused for turning their attention almost exclusively to their production. But it may be well to remind our readers that Australia possesses large stores of coal and iron which may be turned to profitable account, the one supplementing the other in the method of working. Unfortunately, it is the case that the coal seams and the metalliferous mineral deposits are not often found in sufficiently close contiguity to make their working a matter of ease, but with increased and perfected means of communication these difficulties, which, after all, are not in themselves serious, may be expected to be overcome, and the mineralogical development of Australia in other ways than the production of gold and silver may be expected to proceed apace. Iron ore exists abundantly in West Australia, Tasmania, and New South Wales, and we are assured upon the authority of competent experts that there is enough to meet the needs of the whole world in the vague and improbable eventuality of the present sources of supply being exhausted. In West Australia some coal is, indeed, found, but it is said to be of poor quality; while the scarcity and dearth of labour do much to preclude its extended working. There is, however, the saving fact that iron ores are found closely adjacent to the sea, so that water carriage to quarters favourable for its treatment would be neither difficult nor costly. As yet little or no progress has been made in opening up these secondary sources of mineral supply, but industrial history exists to little purpose if it do not teach that vast deposits of valuable minerals will not be allowed to remain permanently untouched in the ground. The conditions of production are not such as to encourage the belief that anything considerable will be done in this direction in the near future. Australia is likely to remain for some years yet a large customer of Great Britain, but she will no doubt one day manufacture iron and steel for herself, and it is at least interesting to peer for a moment into the future, and seek to discover how the economical balance will swing in years to come.

THE war between Japan and China, with its grotesque inequality of result, has now been at an end for a sufficiently long time to enable some estimate to be formed of the progress Japan is making in the arts of peace. The results of observation are such as to astonish the most sanguine of observers, and even to strike a note of enthusiasm from the unemotional and matter-of-fact British Consuls located in the Japanese capital. All the surprising energy which the Japanese put into their struggle against the heavy and cumbersome giant of the East has now set firmly into industrial grooves, and the result is such a commercial expansion as it does not often fall to the lot of economical historians to describe. Mr. J. H. Longford, our Vice-Consul at Tokio, wrote some time ago to the effect that commercial questions are superseding considerations of politics, both in the newspapers and on the public platform. Such questions as treaty revision and commercial education are diverting the general attention from the working of the brand new constitutional machine, much to the advantage of Imperial stability! [It

would be well if our own manufacturers were fully prepared to take advantage of this newly opened sphere for their activity. In the past it has been charged against them that they are somewhat too slow moving in their entry upon new fields of production and distribution, and the fact is the more regrettable since other countries are by no means so backward in this particular. They will, moreover, be quite unable to plead as excuse an insufficiency of information since the industrial papers have latterly been absolutely teeming with articles presenting Japanese commerce from every point of view, and always insisting upon the necessity for prompt and careful action on the part of our merchants if they are to keep pace with competition. This advice must obviously be followed if Britain is to take possession of this new sphere of industry.

FROM one point of view decadence seems now to be setting in among the inhabitants of the western mining camps. We are informed upon credible authority that six-shooters, hangings, and dancing hall dissipation are not such prominent concomitants of life in the West as was formerly the case, while churches, schools, and other civilising influences are present in full proportions. Civilisation has thus gained much, though something may have been lost to poetry, of the Bret Harte type. This is simply what was to have been expected from the steady advancement westward of the high grade of life which has now ruled for over a century in the Eastern States of America. At the same time, it must not be supposed that all the objectionable features have yet been banished from the crude mining communities in the West, though there is certainly no comparison in this respect between the state of things ruling to-day, and that of even a quarter of a century ago. The "roaring" days of the past are over, and the "boys" must regretfully turn their faces towards peaceful pursuits. Odd tales are now sometimes told of the pungent regret with which a few old and tottering men, who can remember with fond regret the full lions of the good old days of primitive ethics, look upon the triumph of the civilising process. These are, however, few, and the respectable influences of the family are leavening humanity as it used to exist in the rough. The more fortunate among these miners, who are undoubtedly hard workers, turn to the cities when they have acquired sufficient wealth to justify them in letting slip the dogs of pleasure for a time. Even in old days, when the camps existed in all their pristine gaiety and disorder, there was, as has been testified by a crowd of contemporary writers, much good feeling and sterling quality to be found among the rough Westerns. But these fast and loose characteristics will not now be found in their former delightful combination. Civilization is in the ascendant, and will, doubtless, remain so. One good subject for light literary treatment has, indeed, been lost to romance, but much more than compensating advantages have been gained to good government, orderly life, and peaceful industrial development.

THE MINING MARKET.

FRIDAY EVENING.

Markets fairly active after the holidays.—Recovery in Chartered.—West Australians firm.—Australasians and Indians in demand.

THE closing of the Stock Exchange for the previous Saturday, as well as for the Whitauitide Bank Holiday, leaves us only four days for discussion, but they have been days of no little interest so far as the Mining Market is concerned. Members returning from their vacation plunged at once into the Settlement, the carry-over in the Westralian department, occupying practically the whole of Tuesday. As had been anticipated, a considerable increase in the Account was manifest in every department, except, perhaps, the Kaffir Circuits, but even here the routine work was heavier, owing to the fact that many dealers who had been taking in shares found it more profitable to deliver and transfer their capital to the Australian side. The differences to be adjusted were large in many cases, some extensive movements having taken place during the progress of the Account. The rates charged were generally rather stiffer than those recently ruling. In the case of Kaffirs this was due to the disturbance of the taking in arrangements already mentioned, and in the Westralian section to the additional bull account. The Kaffir Circuits in which fresh business was on a small scale, suffered correspondingly, but so slight a drawback as 10 per cent. contingencies had no effect upon Kangaroos, which set about bounding upwards as soon as dealers were open to make prices for the middle of June Account. Indians, too, were conspicuously strong, several of the specialties scoring the highest prices marked for several years. New Zealanders displayed a good tone, and several other Australasian groups commanded extensive attention. On Wednesday the making up in the Railway and Miscellaneous Markets distracted the attention of brokers, to the detriment of the Mining Market. The bears seized the opportunity to depress Kaffirs, whilst Westralians were weaker in sympathy with a slump in Hannan's Brownhills, which were pressed for sale on the publication of the long-expected crushing result, which, needless to say, failed to satisfy the optimists. New Zealanders struck out a line for themselves, and Indians were again strong. There was also plenty of activity in Miscellaneous. On Thursday the continued strength of Consolidated Gold Fields of New Zealand attracted widened attention, and the prospects of these shares were as much discussed as any topic. West Australians fully recovered from the slackness of the preceding day, and, after some hesitation, Kaffirs developed a stronger tendency than they had evinced for some days past. The movements in Indians were irregular. Shares which had been going better reacted on profit taking, whilst others took up the running and closed with conspicuous rise. Several Australasian issues were the medium of good business, but lower-priced miscellaneous shares were left to their own devices. This has been Pay Day on the Stock Exchange, and office work has kept a good many professionals out of the House. Whilst Westralians have been rather less active, there is a distinctly better feeling in Kaffirs, and prices have hardened up significantly. The Account upon which we are fairly started will extend over 14 days only, and is not unlikely to be broken up to a certain extent by the in-

attendance of the annual Epsom Carnival, which never fails to attract a representative gathering from Throgmorton-street.

South Africans.

An increase in the contango upon Chartered had the effect of keeping those shares dull for a day or two, but the tone in them has been perceptibly better to-day, and at the close they are fully $\frac{1}{2}$ higher at $3\frac{1}{2}$ buyers. This is in a measure due to the more hopeful views entertained as to the outcome of the political troubles in which Mr. Rhodes is involved. Goldfields Deferred, the other security in which he is particularly interested, were offered at $11\frac{1}{2}$ on Monday, but have hardened with Chartered, and are finally $\frac{1}{2}$ up at $11\frac{1}{2}$. Goldfields Deep are unchanged at $9\frac{1}{2}$, and Gold Trusts the turn better at $7\frac{1}{2}$. Land and Exploration Companies otherwise are rather weaker. Exploring, Land, and Minerals have fallen $\frac{1}{4}$ to $1\frac{1}{2}$, African Estates $\frac{1}{4}$ to $1\frac{1}{2}$, Mashonaland Agency $\frac{1}{4}$ to $2\frac{1}{2}$, Willoughby Consols $\frac{1}{4}$ to $1\frac{1}{2}$, Zambesia $\frac{1}{4}$ to $2\frac{1}{2}$, Rhodesia Exploring $\frac{1}{4}$ to $5\frac{1}{2}$, and Rand Exploration $\frac{1}{4}$ to $1\frac{1}{2}$. In the Barnato Group Johannesburg Investments are conspicuously flat, closing $\frac{1}{4}$ down at 3 . Barnato Consols have lost $\frac{1}{4}$ at $2\frac{1}{2}$, New Primrose $\frac{1}{4}$ at $5\frac{1}{2}$, Glencairn $\frac{1}{4}$ to $3\frac{1}{2}$, and several others $\frac{1}{4}$ or $\frac{1}{2}$, but Buffels have put on $\frac{1}{4}$ at $2\frac{1}{2}$, and Spes Bona $\frac{1}{4}$ at $1\frac{1}{2}$. The Robinson stocks close on last week's marks, after temporary fulness, Randfontein at 3 , Langlaagte at $5\frac{1}{2}$, and Block Bat $1\frac{1}{2}$. East Rands were particularly flat on Wednesday, receding below $6\frac{1}{2}$, but they have since recovered to $6\frac{1}{2}$. St. Angelo has lost $\frac{1}{4}$ at $4\frac{1}{2}$ and Comet $\frac{1}{4}$ at $2\frac{1}{2}$. Kleinfonteins are $\frac{1}{4}$ down at $3\frac{1}{2}$, whilst Anglo-French are quoted at $4\frac{1}{2}$ ex dividend. Rand Mines are $\frac{1}{4}$ down at 28 , but other changes in Deep Levels are favourable, if unimportant. Prices in the Eckstein group are generally lower, though the only loss exceeding $\frac{1}{2}$ is in Jubilee, $\frac{1}{4}$ down at $8\frac{1}{2}$. Cities are quoted at $4\frac{1}{2}$, Ferreira at $19\frac{1}{2}$, Geldenhuis at 4 , Jumpers at $7\frac{1}{2}$, Modders at $7\frac{1}{2}$, Salisbury at 4 , and Wommers at 9 . Few of the changes in the general list are worth mention. Bantjes have recovered to-day to $3\frac{1}{2}$, whilst Crown Reefs at $11\frac{1}{2}$, Knights at $5\frac{1}{2}$, Meyer and Charlton at $6\frac{1}{2}$, Village Main Reef at $6\frac{1}{2}$, Vogelstruis at $3\frac{1}{2}$, Wolhuter at $7\frac{1}{2}$, and Van Ryn at $4\frac{1}{2}$, are all the market turn earlier. In the small Lydenburg Group the only feature is a spurt in Spitzkops, which close $3\frac{1}{2}$ better at $22\frac{1}{2}$. Diamond Shares have come in for a fair amount of attention. De Beers have improved $\frac{1}{4}$ to $29\frac{1}{2}$, and Jagers $\frac{1}{4}$ to $10\frac{1}{2}$.

West Australians.

As already indicated, the most exciting changes have occurred in Hannan's Brownhill, which dipped to $6\frac{1}{2}$ on Wednesday, on the publication of the long-expected crushing return. Although this showed upwards of $4\frac{1}{2}$ ounces to the ton, dissatisfaction was expressed because only 96 tons were treated, suggesting imperfections in the machinery. A recovery has since set in, and the shares are finally $\frac{1}{4}$ down at $6\frac{1}{2}$. North Boulders have further advanced to $1\frac{1}{2}$ —a gain of $\frac{1}{4}$ on the week—on the confirmation of the cablegram regarding the 24-ounce pocket. Great Boulders have scored $\frac{1}{4}$ at $9\frac{1}{2}$, and Associated are $\frac{1}{4}$ better at $2\frac{1}{2}$. Hannan's Reward dipped to $4\frac{1}{2}$, but rallied $10\frac{1}{2}$ to-day, closing within a shade of last week's price at $4\frac{1}{2}$. Central Boulders have risen $\frac{1}{4}$ to $1\frac{1}{2}$, Golden Horseshoe $\frac{1}{4}$ to $1\frac{1}{2}$, Hannan's Main Reef $3\frac{1}{2}$ to $19\frac{1}{2}$, Napier $\frac{1}{4}$ to $3\frac{1}{2}$, Oroya $\frac{1}{4}$ to $1\frac{1}{2}$, and Hannan's Proprietary $\frac{1}{4}$ to $2\frac{1}{2}$. Lake View are finally $\frac{1}{4}$ down at $7\frac{1}{2}$, but Lake View South are $\frac{1}{4}$ higher at $2\frac{1}{2}$. Lady Lochs were at one time offered at $3\frac{1}{2}$, closing $\frac{1}{4}$ down at $3\frac{1}{2}$. The little group connected with the Ramage Syndicate is generally easier, since dealings set in for the new account. The Syndicate shares close at $5\frac{1}{2}$, Black Flags at $2\frac{1}{2}$, White Flags at $1\frac{1}{2}$, Golden Plum at $1\frac{1}{2}$, and Cosmopolitan at $13\frac{1}{2}$. The White Feather group is firm. Hit or Miss have been a good deal talked of and moved up $\frac{1}{4}$ to $2\frac{1}{2}$. Golden Cements are $\frac{1}{4}$ higher at $\frac{1}{2}$ premium. Changes in the Menzies Group are insignificant. O'Driscolls closing at $1\frac{1}{2}$, Florence at $2\frac{1}{2}$, and Lady Shepton at $3\frac{1}{2}$. Western Australia Gold Fields were offered during the short time that Hannan's Brownhill was out of favour, but close with a full recovery at $9\frac{1}{2}$. Hampden Plains have improved $\frac{1}{4}$ to $5\frac{1}{2}$, and Mainland Consols $\frac{1}{4}$ to $4\frac{1}{2}$. Exploring and Finance and London and Globe are $\frac{1}{4}$ better at $4\frac{1}{2}$, with Colonial Finance unchanged at $4\frac{1}{2}$.

Miscellaneous.

Quite the most sensational movement in this section has taken place in the shares of the Consolidated Gold Fields of New Zealand, which were introduced upon the market for the first time less than three months ago. The company was formed by an ex-member of the Johannesburg Stock Exchange, who migrated to the prolific Thames district and secured sundry properties and options now owned by the undertaking which has been so much discussed this week. Dealings in the £1 shares commenced in London in the neighbourhood of $2\frac{1}{2}$, and a week ago the price was sent out a shade over 3 . After a big jump on Thursday, the quotation was good as $4\frac{1}{2}$ this morning. Rumour, of course, is hard at work with prognostications of much bigger advances to come, the idea being that subsidiary companies will be floated admitting of periodical distributions of bonus shares. At the close the price is a shade off. Waitakari have put on $\frac{1}{4}$ at $5\frac{1}{2}$, Waihi $\frac{1}{4}$ at $6\frac{1}{2}$, Silverton $\frac{1}{4}$ at 4 , and Kapanga $\frac{1}{4}$ at $16\frac{1}{2}$. An Australasian share which has attracted a good deal of notice is Mount Lyell, which left off under 7 last week, and touched 9 this morning, closing $1\frac{1}{2}$ higher in balance at $8\frac{1}{2}$. The company owns every class of mineral from iron to gold, and it is suggested that discoveries of copper are at the bottom of the present activity. Mount Morgans are unchanged at $3\frac{1}{2}$. Broken Hills have improved $\frac{1}{4}$ to $2\frac{1}{2}$, whilst British are unchanged at $25\frac{1}{2}$. Gibraltar Consols are a shade below the best, but still $\frac{1}{4}$ higher at $1\frac{1}{2}$. Bendigo New Chums have gained $1\frac{1}{2}$ at $11\frac{1}{2}$. Gold, and strength has been shown in the Wentworth Group, more especially by Aladdins, which finish $\frac{1}{4}$ up at $1\frac{1}{2}$, the crushing returns for four weeks showing a yield of 1259 ounces of gold from 246 tons. Copper shares have continued their upward career under the lead of Rio Tinto, which are a clear point to the good at $2\frac{1}{2}$. Tharais has scored $\frac{1}{4}$ at $5\frac{1}{2}$, Anaconda $\frac{1}{4}$ at $6\frac{1}{2}$, and Mason and Barry $\frac{1}{4}$ at $3\frac{1}{2}$, whilst Libiola at 3 , Copiapu at $2\frac{1}{2}$, and Capes at $2\frac{1}{2}$ are all $\frac{1}{4}$ higher. The only changes in the Charters Towers group are gains of $\frac{1}{4}$ in Mill's Day Dawn at $\frac{1}{2}$, and 6d. in Day Dawn Block at $13\frac{1}{2}$, and a decline of $\frac{1}{4}$ in Brilliant Block to $1\frac{1}{2}$.

STOCK EXCHANGE SETTLING DAYS.

CONSOLS.

Monday, June 1.	Wednesday, July 1
MINING MAKING-UP DAYS:	
Tuesday, June 9	Tuesday, June 23
MINING NAME DAYS:	
Wednesday, June 10	Wednesday, June 24
ACCOUNT DAYS:	
Friday, June 12	Friday, June 26

The secretary of the ISLE OF MAN MINING COMPANY sold on Tuesday, 100 tons of ore at £9 3s. 6d. per ton.

SIDE LIGHTS ON THE LAW:

Legal Jottings on Cases in the Courts, and on Questions affecting Mining, Railway, Financial, Industrial, and allied Interests.

BY A BARRISTER.

A VERY useful little Act of Parliament for Life Insurance Companies has already received the Queen's approval, and been added to the Statute Book this year. How far, and in what cases, directors of Life Insurance Companies were justified in taking advantage of the Trustee Relief Acts, and when they should go to the Court and ask leave to interplead, have always been more or less vexed questions. Now, by the "Life Assurance Companies (Payment into Court) Act, 1896," any corporation company or society carrying on the business of life assurance, not being a society registered under the Acts relating to friendly societies, may pay into Court any moneys payable by them (sic) under a life policy in respect of which, in the opinion of their board of directors, no sufficient discharge can otherwise be obtained. The receipt or certificate of the Court officer is to be a sufficient discharge to the company for the moneys. The term life policy in the Act is to include any policy not foreign to the business of life insurance.

The importance of City men is clearly on the increase. A few years since the fashion was for the authorities who regulate the sittings of our Courts of Justice to ignore the needs and requirements of the City men. The matter had become so glaring that the Corporation and the Chamber of Commerce returned the compliment, and plainly told the Courts that they did not want them, could do without them, and would do their own law for themselves. This was no empty boast, for City men meant it, and framed their own Court and procedure. This brought the authorities to their senses; the Court's dignity was hurt, and they began to think they had better mend their ways. Mr. Justice Mathew was appointed to preside at a Commercial Court, and was given, as far as possible, a free hand to make his own procedure. He had before him the procedure proposed by the City men for their own Court. It violated all the rigmarole of the practice which has of late years obtained in the Courts of law and equity. Mr. Justice Mathew, as a wise man, did not ignore the suggestions to be gathered therefrom. The result has been that he has created a Court to which City men are sending their cases. It was not intended by the authorities that Mr. Justice Mathew should be permanently attached to the Commercial Court; he was named to preside there as the first of a rota to be nominated. The other day, when it was announced that he was going on circuit, and that he would be succeeded by another learned judge, those who had come to his Court objected, having forgotten that he was not a permanency, and realising that another learned judge would probably not fall in with a procedure which was the creation to a great extent of the judge who had been presiding there. The representations of city men through their solicitors has, however, had its effect; Mr. Justice Mathew is not to go on circuit, and for a second time the wonderful and unexpected thing has happened—the requirements of the City have not been ignored by the authorities.

I NOTICE among the new Bills introduced this session a further one to amend the Merchandise Marks Act of 1887. It bears the names of Mr. Charles Murray, Sir Arthur Forwood, and Mr. Newdigate, on the back. It proposes to deal with Section 7, which affects the watch trade, and but for the Memorandum which precedes the Bill, I should have thought it was introduced in the interest of the watch trade, or rather in the interest of that section of the trade which prefers to have the watches made abroad, but is pleased to sell such watches in cases marked with English hall marks. It will be remembered that Section 7 is directed, amongst other things, to the prevention of the sale as English watches of watches made abroad, and as this fraud on the purchaser was frequently accomplished by placing a foreign made watch in a case stamped with an English hall mark, it was enacted that where a watch-case has on it a mark or words, which by common repute is considered as constituting a description of the country in which the watch was made, and the watch itself bears no description of the country where it was made (as is usually the case in a foreign made watch so sold), the mark or the words shall be deemed to be a description to which, if false, the provisions of the Act as to false trade descriptions apply. The present Bill proposes now to enact as follows:—"No words purporting to be a description of the country where the watch was made shall be considered to be a description of that country within the meaning of the Act, unless such words be plainly and visibly stamped or printed upon the face or dial of the said watch." The result of this proposed enactment, if it became law, would be that no words, however fraudulent they might be, which appeared on the case purporting to be a description of the place where the watch was made, can be brought within the provisions of the Act, unless those words are also on the face or dial of the watch. This legislation, it is claimed by the introducers of the Bill, is in the interests of the purchaser. Poor purchasers and poor legislators, say I.

DIARY.

Monday, June 1.

Beaconsfield Diamond Mining Co., Winchester House, 11.
Anglo-Colorado Exploration Syndicate, Winchester Ho., 12.
Armada Gold Mining Company, Cannon-street Hotel, 12.
Exploration Company, Cannon-street Hotel, 2.
Transvaal General Association, Cannon-street Hotel, 3.
Caratal Mining Company, Winchester House, 3.
West Australian and General Association, Win. House, 3.

Tuesday, June 2.

Lake View & Boulder Junction Gold Mines, Can.-st. H., 11.45.
The Marble (Moreau-Rae) Syndicate, Winchester House, 12.
Gold Estates of Australia, Winchester House, 2.
Kinsella Gold Mines, Winchester House, 2.
Zambesia Rand Investment Company, Winchester House, 2.
Wheal Grenville, Camborne, 2.
Nil Desperandum Gold Mines, Winchester House, 3.
Nitrate Railways, Winchester House, 3.
Tin Tackling, Tabb's Hotel, Redruth.

Wednesday, June 3.

Loma Gold Mines, Winchester House, 12 and 4.
Mount Darwin Syndicate, Winchester House, 2.

Thursday, June 4.

Federated Institution of Mining Engineers, Institute of Civil Engineers, 12.
St. Helen's Development Syndicate, Winchester House, 12.
Niddrie and Benhar Coal, Edinburgh, 1.30.
Village Main Reef Mining Company, Cannon-street Hotel, 2.
Lomagunda Exploration Company, Winchester House, 3.

Friday, June 5.

Federated Institution of Mining Engineers (continued).
Blackett's Claim Gold Mining Co., Winchester House, 2.

THE METAL MARKETS.

THE METAL MARKET, LONDON, MAY 29.

Copper.

THE speculative market opened on Tuesday strong, and a large business took place at rapidly advancing prices, cash G.M.B.'s being done on Tuesday at £47 to £47 5s., and on Wednesday up to £47 10s. three months rising during the same period from £47 7s. 6d. to £47 17s. 6d. The growing firmness in the United States was one of the most prominent factors in this advance, Lake having been done as high as 11½ cents, per lb. Other influences making for the same result were the active demand experienced from consumers here, and the increased attention paid to G.M.B.'s by speculators. On Thursday came a slight reaction, and £47 2s. 6d. was accepted for cash, and £47 13s. 9d. for three months, but we rallied again to £47 7s. 6d. The close is steady at £47 3s. 9d. to £47s. 5s. s.c., and £47 10s. to £47 11s. 3d. three months.

Tin.

opened quiet on Tuesday at £61 three months; Straits, £60 10s. s.c., £60 8s. 9d. being done later in the day. The tendency on Wednesday was rather firmer, and about 200 tons changed hands at £60 10s. and £60 12s. 6d. s.c., and £61 2s. 6d. three months. On Thursday business took place at £61 2s. 6d., and £61 3s. 9d. three months, but to-day's transactions have resulted in a slight decline, the market closing quiet at £60 10s. to £60 12s. 6d. s.c., and £61 to £61 2s. 6d. three months. Billiton opened at fl. 36½ cash, and closed this morning at fl. 36½, with Banca at fl. 37½.

Pig Iron.

The Glasgow market opened in firm tendency, but the first price realised—viz., 46s. 10d. cash—was quickly followed by a lower range of values, down to 46s. 3½d. being accepted by Wednesday evening. On Thursday, the values realised were 46s. 4½d. to 46s. 7½d. cash, and to-day, after a relapse to 46s. 4½d., the article rallied again, the close being steady at 46s. 7½d. sellers of s.c. of Scotch, 47s. 2½d. hematite, and 37s. 3½d. Middlesbrough.

Lead.

Is steady, but without much business passing, and the closing quotations are £11 1s. 3d. to £11 2s. 6d. for soft foreign, and £11 6s. 3d. to £11 7s. 6d. for English.

Spelter.

Has fully maintained the advance reported last week. We close firm at £17 15s. to £17 16s. 3d. ordinaries, £18 to £18 1s. 3d. specials.

Antimony.

Is quiet at £30 to £30 10s.

Quicksilver.

First is quoted £6 15s. and seconds £6 13s. 6d. to £6 17s. There is nothing new to report.

The following are to-night's (May 29) prices of metals:—

	Copper.	£ s. d.	£ s. d.
Tough cake and ingot	...	51 0 0	51 5 0
Best selected	...	51 10 0	51 11 0
Electrolytic Copper	...	53 0 0	54 10 0
Sheets and sheathing	58 0 0
Flat bottoms	61 0 0
Chill bars
Good merchantable, spot, & 3 months respectively	...	47 5 0	47 11 3
Copper tubes, seamless	0 0 8

	Alloys.	£ s. d.	£ s. d.
BRASS: Wire	0 0 5½
" Tubes (solid drawn)	0 0 6½
" Sheets	0 0 6½
PHOSPHOR BRONZE: Alloys II.	78 0 0
" III. or VII.	81 0 0
" XI.	78 0 0
" Vulcan brand Al	72 0 0
DURO METAL	72 0 0
BULL'S METAL	65 0 0

	Ferrobronzes (Vivian's).	£ s. d.	£ s. d.
Ingots	...	0 0 8	...
Ordinary sheets, plates, bolts and bars	...	0 0 7	...
Screw bolts and nuts	...	0 0 8½	...
Pump rods, plain	...	0 0 7½	...
" finished	...	0 0 10½	...
DELTA METAL: No. 4 (per ton)
" Sheets and plates (per lb.)
" Bars, round, square, flat (per lb.)
" hexagon (per lb.)

	Tin.	£ s. d.	£ s. d.
English, ingots, f.o.b.	...	61 10 0	...
" bars	...	65 10 0	...
" refined	...	66 10 0	...
Straits, spot and 3 months respectively	...	62 12 8	61 2 6
Australian spot, and three months respectively	...	62 0 0	62 10 0
Banco (in Holland)	62 7 6
TIN PLATES: Charcoal, best quality	...	0 14 3	0 17 6
" ordinary	...	0 10 9	0 13 6
" Coke, best quality	...	0 9 6	0 9 9
" ordinary	...	0 9 3	0 9 6

These prices of tinplates are f.o.b. at Swansea; at Liverpool 6d. per box more.

	Iron.	£ s. d.	£ s. d.
Fig. G.M.B., f.o.b., Clyde, spot	...	2 8 7	...
" Scotch pig, No. 1 Gartsherrie	...	2 10 6	...
" " Coltness	...	2 13 0	...
" " Clyde	...	2 10 0	...
" " Govan	...	2 7 3	...
Bars, Welsh, f.o.b. Wales	...	5 5 0	...
Bars, Staffordshire, at works	...	5 5 0	...
Sheets	...	6 10 9	...
Plates	...	5 7 6	...
Hoops	...	5 15 3	...
Ship plates, Middlesbrough	...	5 13	...
Street: English spring	...	10 0 0	...
" cast	...	42 0 0	...
" Rails at works, according to section	...	5 8 0	...

	Lead.	£ s. d.	£ s. d.
Spanish or soft foreign	...	11 1 3	11 2 6
English pig, common	...	11 6 3	11 7 6
" L.B.	11 15 0
" sheet and bar lead	12 5 0
" pipe	12 15
" red	14 10 0
" white	17 10 0
" patent shot	14 15 0

	Spelter.	£ s. d.	£ s. d.
Silesian ordinary brands	...	17 15 0	17 18 3
" special brands	...	18 0 0	18 1 3
English Swansons	...	18 10 0	18 11 3
Sheet Zinc	...	20 0 0	20 10 0

	Antimony.	£ s. d.	£ s. d.
Antimony	...	30 0 0	30 10 0

	Quicksilver.	£ s. d.	£ s. d.
Flasks, 75 lbs. warrants	...	6 13 6	6 15 0
Ore, c.l.f., U.K. ports	...	0 11	0 1
1st quality, 50 per cent. and upwards	...	0 10	0 1
2nd " 47 per cent. to 50 per cent.	...	0 9	0 1
3rd " 40 " 47 per cent.	...	0 9	0 11

	Aluminium.	£ s. d.	£ s. d.
98-99½ per cent. (guaranteed 98 per cent. min.) in ingots (1 cwt. lots and upwards)	9 1 9½

	Nickel.	£ s. d.	£ s. d.
98-99 per cent. guarantee	...	0 12	0 1 0

THE BRITISH ALUMINIUM COMPANY.—This company has purchased the ground in Ingleston-street, Greenock, formerly occupied by the engine works of Messrs. R. Steele and Co. It extends to about 6 acres, and has water power from one of the falls.

RONTGEN RAYS IN MINING.—It is reported that Dr. J. C. Perr and W. C. Cheney, superintendent of the Portland General Electric Company, have been very successful in defining free gold in quartz by means of Röntgen rays, as plainly if it lay on the surface.

MR. ARTHUR THOMAS, M.E., M.I.M.M., is leaving California to undertake an extended prospecting tour through Mexico.

Messrs. BARRY, HEAD, AND CO., Iron and Steel Merchants, report that prices are much the same as last reported, though a somewhat irregular tone prevails. In spite of disappointing present realisations, confidence in better things to come continues unabated.

"THE MINING JOURNAL" SHARE LIST.

ABBREVIATIONS AND REFERENCES.—The following are the significations of the abbreviations and references which occur in the Share List:—A, Antimony; Ar, Arsenic; B, Biende; Br, Borax; C, Copper; D, Diamond; G, Gold; I, Iron; L, Lead; M, Manganese; N, Nitrates; P, Phosphates; Q, Quicksilver; R, Ruby; S, Silver; S-L, Silver-lead; Sul, Sulphur; T, Tin; and Z, Zinc. * In the "Amount of Share" column of British Mines signifies that the mine is conducted on "Cost Book" principles; † in the "Head Office" column of African Mines signifies that the address given is not that of the head office but of a sub, or transfer office; and ‡, following the names of African Mines, signifies that they are subject to the Limited Liability Law of the South African Republic.

* The following is by far the most complete and comprehensive list of mines, in whose shares business is being currently transacted, published. Additions will be made from time to time as occasion requires. Every effort is made to ensure accuracy, and Secretaries of Companies, Share Dealers, and our readers generally, are cordially invited to co-operate with us to this end, by notifying us of any errors that may at any time occur. We desire it to be understood that, while our Share List will almost invariably be found correct, we do not hold ourselves responsible for any loss or inconvenience that may arise from possible inaccuracies.

AFRICAN MINES.

Name.	Closing Price, May 29, 1896.	Closing Price, May 24, 1896.	Am't. of Share	When last X'd and Dividend.	Called up Per Share.	Amount of Stock or No. of Shares Issued.	Situation of Mine.	Head Office.
Abbott's Con. Reefs	6/ 7/	6/ 7/	1 C	—	1 0 0	—	De Kaap	Broad Street Avenue
Alder Consolidated	1 1/2	1 1/2	1 0	—	1 0 0	250,000	1, Moorgate place.	
African Estates	1 1/2	1 1/2	1 0	2/4 rts Oct. 1895	1 0 0	438,500	3, Copthall-buildings	
" Gold Recovery	1 1/2	1 1/2	1 0	—	1 0 0	175,000	23, College Hill.	
Africana	1 1/2	1 1/2	1 0	—	1 0 0	1,075,000	24, Clement's lane	
Afrikaner	1 1/2	1 1/2	1 0	—	1 0 0	40,000	23, College Hill	
Alexandra Estate	1 1/2	1 1/2	1 0	—	1 0 0	225,000	15, George street	
Anglo-French Exp.	4 1/2	4 1/2	5 0	7/ May 29 '96	5 0 0	35,100	3, Princes street	
" Matabeleland	2 1/2	2 1/2	1 0	—	1 0 0	39,750	Winchester House.	
Apprentice	1 1/2	1 1/2	1 0	—	1 0 0	77,885	Dashwood House.	
Aurora	1 1/2	1 1/2	1 0	5% Mar. '93	1 0 0	65,000	8, Old Jewry.	
West United	1 1/2	1 1/2	1 0	—	1 0 0	100,000	7, Lothbury	
Austral-African	1 1/2	1 1/2	1 0	3/- Dec. 16 '95	1 0 0	250,000	Token Ho., Ophthal.	
Balks Kersteling	2/ 2/8	2/ 2/8	10/	—	0 10 0	520,000	Transvaal	85, Gracechurch-st.
" Land	5/3 5/9	4/9 5/3	10/	1/ Feb. 13 '96	0 10 0	520,000	—	
Banjoes Consol.	2 1/2	2 1/2	1 0	1/ Feb. 13 '96	1 0 0	83,000	15, Geo. St., Mn Ho.	
Barnato Bank	1 1/2	1 1/2	1 0	—	1 0 0	2,225,000	7, Lothbury	
" Consol.	2 1/2	2 1/2	1 0	—	1 0 0	1,000,000	—	
Barroet	1 1/2	1 1/2	1 0	—	0 9 0	407,496	De Kaap	17, Basinghall-street
Bechuanaland Exp.	1 1/2	1 1/2	1 0	—	1 0 0	100,000	Bechuanaland	12, Basinghall street
" Trad & Assoc.	1 1/2	1 1/2	1 0	—	1 0 0	100,000	—	
Big Golden Quarry	1 1/2	1 1/2	5/-	—	0 5 0	483,228	De Kaap	Wardford Court.
Block "B" Lang.	2 1/2	2 1/2	1 0	—	1 0 0	535,000	Rand	8, Princes-st., E.C.
Bonanza	2 1/2	2 1/2	1 0	—	1 0 0	2,000	Turffontein	120, Bishopsgate-st.
Brit. S. A. Char.	2 1/2	2 1/2	1 0	—	1 0 0	1,999,780	S. Africa	15, St. Swithin's-lane
Bufoedoom	2 1/2	2 1/2	1 0	16/- Nov. 28 '95	1 0 0	250,000	Potchefst.	7, Lothbury
" Central	2 1/2	2 1/2	1 0	—	1 0 0	—	—	
" Consolidated	2 1/2	2 1/2	1 0	—	1 0 0	225,000	—	
Cape Asbestos	3/ 1	3/ 1	1 0	—	1 0 0	50,311	Orange Rv	19, St. Swithin's-lane
" Copper	2 1/2	2 1/2	2 0	2/6 Dec. 16 '95	2 0 0	300,000	Cape Col.	9, Queen-street-place.
" 5% Pref.	2 1/2	2 1/2	2 0	2/6 Dec. 16 '95	2 0 0	45,000	—	
Casual Consol.	1 1/2	1 1/2	1 0	1/5 Apr. 29 '96	1 0 0	75,000	Johannesb.	99, Cannon-street.
Cent. de Kaap	1 1/2	1 1/2	5/-	—	0 2 6	—	De Kaap	Palmerston Bldg.
" Roodp's Deep	1 1/2	1 1/2	1 0	—	1 0 0	240,000	—	
Champ d'Or	2 1/2	2 1/2	1 0	3/2 Feb. 27 '96	1 0 0	116,016	Rand	8, Old Jewry, E.C.
Charterland G.F.	1 1/2	1 1/2	1 0	—	1 0 0	150,000	—	
Chimes West	1 1/2	1 1/2	1 0	—	1 0 0	340,000	Rand	19, St. Swithin's-lane
Chimney and Sub. W.G.	1 1/2	1 1/2	1 0	10/- June '95	1 0 0	721,500	Graveland	62, Lombard-st.
Con. Buitfontein	3/3 2/4	3/3 2/4	1 0	3d Jan. 16 '96	1 0 0	187,250	Transvaal	30, St. Swithin's-lane
Con. Deep Levels	1 1/2	1 1/2	1 0	4/- July 11 '95	1 0 0	2,200	S. Africa	8, Old Jewry.
Con. G. Fields S.A.	1 1/2	1 1/2	1 0	10/- May 14 '96	1 0 0	1,243,999	—	
Do. 6% Pref.	1 1/2	1 1/2	5 C	7-15 Dec 30 '95	5 0 0	50,000	—	
Do. 5% Z. Deben.	1 1/2	1 1/2	5 C	5% Jan. 2 '96	5 0 0	50,000	—	
Crown Deep	1 1/2	1 1/2	1 0	—	1 0 0	250,000	Rand	120, Bishopsgate-st.
" Reef	1 1/2	1 1/2	1 0	—	1 0 0	182,000	—	
De Beers Consol.	29 1/2	29 1/2	5 0	16/- Jan. 16 '96	5 0 0	789,791	Kimberley	62, Lombard-street.
Do. 5% 1st Deb.	10 1/2	10 1/2	—	5% Jan. 2 '96	—	23,500,000	—	
Do. 5% 2nd Deb.	10 1/2	10 1/2	—	5% Oct. '95	—	720,000	—	
Doornkop	4/ 5/	4/ 5/	1 0	—	1 0 0	350,300	Doornkop	Wardford Court.
Driefontein	2 1/2	2 1/2	1 0	—	1 0 0	175,000	—	
Durban Roodp't	6 1/2	6 1/2	1 0	3/- Dec. 16 '95	1 0 0	612,000	Rand	28, Leadenhall-bldg.
" Deep	6 1/2	6 1/2	1 0	—	1 0 0	—	—	
Eastleigh	3/ 1	3/ 1	1 0	—	1 0 0	240,000	Klerkdrp	52, Leadenhall Street
East Orion	3/ 1	3/ 1	1 0	—	1 0 0	270,000	—	
" Rand	6 1/2	6 1/2	1 0	—	1 0 0	670,000	S. Africa	170, Winchester-ho.
Exploration	3/ 1	3/ 1	1 0	5/- Mar. 12 '96	1 0 0	148,000	—	
Exploring L & M.	1 1/2	1 1/2	1 0	2/ Dec. 16 '95	1 0 0	215,000	—	
Ferret	19 1/2	19 1/2	1 0	13/ Mar. 12 '96	1 0 0	45,000	Rand	120, Bishopsgate-st.
French Rand	2 1/2	2 1/2	1 0	—	1 0 0	490,000	Rand	28, Austin Friars.
Geldenhuis Deep	5 1/2	5 1/2	1 0	—	1 0 0	865,000	Transvaal	30, St. Swithin's-lane.
Geldenhuis Est. G	3 1/2	3 1/2	1 C	5/- July 26 '95	1 0 0	187,500	Rand	120, Bishopsgate-st.
" Main Reef	3 1/2	3 1/2	1 0	2/ Feb. 13 '96	1 0 0	150,000	—	
George Goch	2 1/2	2 1/2	1 0	—	1 0 0	100,000	—	
Ginsberg New	1 1/2	1 1/2	1 0	—	1 0 0	130,000	Driefont.	Wardford Court, E.C.
Glencairn	3 1/2	3 1/2	1 0	2/6 Feb. 13 '96	1 0 0	300,000	Rand	2, Drapers-gardens.
Gld. Fls. Deep	9 1/2	9 1/2	1 0	—	1 0 0	600,000	S. Africa	8, Old Jewry.
G.F. of Lydenburg	2 1/2	2 1/2	1 0	—	1 0 0	200,000	Lydenburg	7, Lothbury.
G.F. of Mashonid.	2 1/2	2 1/2	1 0	—	1 0 0	—	—	
G.F. of T. de Fuego	5/ 5/	5/ 5/	5/-	2 1/2 Mar. '92	0 5 0	400,000	Lydenburg	2, Tokenhouse Bldg.
Grassop	4/3 4/9	4/3 4/9	5/-	—	1 0 0	376,668	Groenvald	1, Finch lane
Gr. Estrn. Col. lery	1 1/2	1 1/2	1 0	4/ Jan. 16 '96	10 0 0	195,700	Transvaal	62, Lombard-street
Griqualand W.D.	8 1/2	8 1/2	10 0	—	—	—	Heidelberg	—
Heidelberg Est. Ex.	3/ 3/	3/ 3/	1 0	—	1 0 0	—	—	
Henderson's Trans	2 1/2	2 1/2	1 0	—	1 0 0	250,000	Zoutpansg.	85, Gracechurch st.
Henry Nourse	6 1/2	6 1/2	1 0	—	1 0 0	100,000	De Kaap	Wardford-court.
Hetty	3/ 3/	3/ 3/	1 0	—	1 0 0	110,000	Middelvel.	55, Bishopsgate st Wn
Joe's Reef	3/ 3/	3/ 3/	1 0	—	1 0 0	57,404	—	
Johannesburg Invest	2 1/2	2 1/2	1 0	20% Oct. '95	1 0 0	650,000	—	
" Pioneer	9 1/2	9 1/2	1 0	12 1/2 Nov. '93	1 0 0	21,000	Rand	7, Lothbury.
Jubilee	8 1/2	8 1/2	1 0	4/ Apr. 29 '96	1 0 0	30,000	—	
Jumpers	7 1/2	7 1/2	1 0	6/- Mar. 27 '96	1 0 0	100,000	—	
" Deep	3 1/2	3 1/2	1 0	—	1 0 0	300,000	—	
Kimberley	1 1/2	1 1/2	1 0	2/ Jan. 16 '95	0 10 0	98,672	Kimberley	19, Finsbury-circus.
" Rdp.	1 1/2	1 1/2	1 0	—	0 9 0	125,000	—	
Klerkdrp	14 1/2	14 1/2	10/-	—	0 9 0	400,000	Klerkdrp	2, Drapers-gardens.
Knight's Deep	2 1/2	2 1/2	1 0	—	1 0 0	295,194	—	
Kofffontein	1 1/2	1 1/2	1 0	—	1 0 0	125,000	Jacobdaal	110, Cannon St.
Langsater	2 1/2	2 1/2	1 0	—	1 0 0	226,500	—	
Langlaagte Est. G	5 1/2	5 1/2	1 0	5/ Feb. 13 '96	1 0 0	100,000	Lnip. Vlei	120, Bishopsgate st. Wn
" Royal	2 1/2	2 1/2	1 0	—	1 0 0	100,000	Rand	59, Holborn Viaduct
" Star	1 1/2	1 1/2	1 0	—	1 0 0	170,000	—	
Lisbon-Berlin	5/3 5/9	5/3 5/9	2/8	—	0 2 6	889,233	Lydenburg	2, Drapers-gardens.
Lon. Paris Plu. & M.	1 1/2	1 1/2	1 0	—	1 0 0	500,000	—	
London & S. A. Ex.	14 2 1/2	14 2 1/2	10/	4/- Mar. 12 '96	0 10 0	100,000	S. Africa	53, Old Broad Street.
Lnipdaars Vlei Est.	1 1/2	1 1/2	1 0	6% Mar. '90	1 0 0	319,000	—	
Lydenburg Estate	1 1/2	1 1/2	1 0	—	1 0 0	190,000	Lydenburg	Wardford-court.
" Ld & Enp	1 1/2	1 1/2	1 0	—	1 0 0	200,000	—	
" M.G. Est.	4 1/2	4 1/2	1 0	—	1 0 0	300,000	—	
Main Reef (New) G	1 1/2	1 1/2	1 0	—	0 2 6	111,500	Transvaal	15, George St., Mn H
Malmann Gold Ryn	2 1/2	2 1/2	2/8	—	0 2 6	100,000	Transvaal	Thornorton House.
Marie Louise	2 1/2	2 1/2	1 0	—	1 0 0	80,000	Rand	15, George St., Mn H
Mafelave Nigel	1 1/2	1 1/2	1 0	—	1 0 0	250,000	—	
Mashon Agency	2 1/2	2 1/2	1 0	2/ Apr. 18 '96	1 0 0	100,000	Mashonid	8, Old Jewry, E.C.
" Central	3/ 3/	3/ 3/	1 0	—	1 0 0	110,000	—	
Matabele'd G. R.Y	2 1/2	2 1/2	1 0	—	1 0 0	110,000	Matabele'd	3, Copthall-buildings.
May Con. (New) G	2 1/2	2 1/2	1 0	4/- Mar. 12 '96	1 0 0	236,500	Rand	4, Lothbury.
Meyer & Charl.	6 1/2	6 1/2	1 0	5/ Feb. 13 '96	1 0 0	75,000	—	
Minerva	1 1/2	1 1/2	1 0	—	1 0 0	150,000	—	
Mine Selecta	1 1/2	1 1/2	1 0	—	1 0 0	100,000	—	
Modderfontein G	1 1/2	1 1/2	1 0	—	1 0 0	200,000	Rand	33, Br'd St. Avenue.
" B" Extension	2 1/2	2 1/2	1 0	—	1 0 0	220,000	—	
Molyneux Consol.	1 1/2	1 1/2	1 0	—	1 0 0	220,000	Modderfont.	120, Bishopsgate st
Moodies	1 1/2	1 1/2	1 0	—	1 0 0	240,000	—	
Mosambique	1 1/2	1 1/2	1 0	—	1 0 0	400,000	S. E. Africa	Gresham House.
Namaqua	1 1/2	1 1/2	2 0	2/6 July '91	2 0 0	94,351	Namaquald	34, Leadenhall-bldg.
New African	2 1/2	2 1/2	1 0	20/ Dec. 30 '95	1 0 0	100,000	—	
" Chimes	1 1/2	1 1/2	1 0	1/- Mar. 27 '96	1 0 0	100,000	Rand	83, Hatton Garden.
" Comet	2 1/2	2 1/2	1 0	—	1 0 0	175,000	Heidelberg	8, Old Jewry, E.C.
" Cronus	1 1/2	1 1/2	1 0	—	1 0 0	255,000	Langlaagte	120, Bishopsgate-st. Wn
" Gordon	5/ 5/3	5/ 5/3	1 0	5% Dec. '95	1 0 0	404,344	Griguland	116, Cannon-street.
" Heriot	9 1/2	9 1/2	1 0	4/ Apr. 29 '96	1 0 0	88,750	Rand	96, Gresham Ho. E.C.
" Jagersfont.	10 1/2	10 1/2	5 0	10/ Apr. 15 '96	5 0 0	200,000	Transvaal	5, Copthall-buildings
" Kleinfontein	3 1/2	3 1/2	1 0	12 1/2 Mar. '95	1 0 0	82,500	—	
" Midas	3 1/2	3 1/2	1 0	—	1 0 0	150,000	Winchester House	120, Bishopsgate-st. W
" Primrose	3 1/2	3 1/2	1 0	5/ Feb. 13 '96	1 0 0	278,750	Rand	2, Drapers-gardens.
" Rietfontein	2 1/2	2 1/2	1 0	—	1 0 0	160,000	—	
" S. Augustus	7 1/2	7 1/2	1 0	—	0 18 6	298,157	Griguland	Wardford-court, E.C.
" S. Augustus	1 1/2	1 1/2	1 0	—	1 0 0	113,701	—	
" S. Augustus	1 1/2	1 1/2	1 0	—	1 0 0	125,000	Heidelberg	24, N. John-st., L'pi
" S. Augustus	1 1/2	1 1/2	1 0	—	1 0 0	—	—	

AFRICAN MINES—(Continued).

AUSTRALIAN AND NEW ZEALAND MINES—(Continued).

Name.	Closing Price, May 29, 1896	Closing Price, May 27, 1896	Am't. of share	When last paid Dividend	Called up Per Share.	Amount of Stock or No. of Shares issued.	Situation of Mine.	Head Office
W. A. General.....	4 1/2	4 1/2	1 0	—	0 14 0	—	W. Austral	28, St. S within s-lane
" Australian G.F.	9 1/2	9 1/2	1 0	15 Mar 12 '96	1 0 0	65,000	Colgardie	28-29
" Mines Dri	1 1/2	1 1/2	1 0	10/ Oct 30, '95	1 0 0	40,000	W. Austral	3, Princes Street
" Aust. Mining	9 1/2	9 1/2	5/	7 1/2 Mar. 27 '96	0 5 0	320,000	"	257, Winchester Ho.
" Aust. Pioneer.	2 1/2	2 1/2	1 0	15 Oct 19 '95	0 15 0	19,993	"	139, Cannon-street.
" Share Corp.	19 1/2	19 1/2	1 0	—	0 5 0	200,000	"	28, St. S within s-lane
" Venture.....	2 1/2	2 1/2	1 0	15/ Oct. 30 '95	1 0 0	—	"	3, Princes Street.
West Boulder.....	3 1/2	3 1/2	—	—	—	—	"	"
White Feather ...	2 1/2	2 1/2	1 0	—	1 0 0	60,000	Coolgardie	28 & 29, S within s-lane
Zapopan.....G	3/	4/	1 0	—	1 0 0	25,000	NW Austral	70, Bishop-gate-street
Zeehan Montana S	—	4/	1 0	-4 Dec. 95	1 0 0	66,000	Tasmania	11, Queen Victoria st
" " "	—	—	1 0	2 1/2 Dec. 95	0 2 8	12,000	"	"

EUROPEAN MINES.

Alamillos	1 1/2	1 1/2	1 1/2	1 1/2	1/9 Apr 15 '96	2 0 0	35,000	Spain	6, Queen-street-place
Conselt Ore	7 1/2	7 1/2	7 1/2	7 1/2	5/- July 94	1 0 0	55,200	Spain	19, Grey-st, N'castle
Fortuna	3 1/2	3 1/2	3 1/2	3 1/2	2 1/0 Apr 15 '96	3 0 0	25,000	Spain	"
Libiola	2 1/2	2 1/2	2 1/2	2 1/2	4/- Apr. 29 '96	5 0 0	50,400	Italy	Dashwood Ho., E.O.
Libraes	5 1/2	5 1/2	5 1/2	5 1/2	9/- Apr 15 '96	3 0 0	14,998	Spain	6, Queen-street-place.
Mason & Barry...C	3 1/2	3 1/2	3 1/2	3 1/2	2/ May 23 '94	5 0 0	185,172	Portugal	87, Cannon-street.
Pastorena	7 1/2	7 1/2	7 1/2	7 1/2	11/6 Dec. '94	20 0 0	17,000	Italy	6-7, Queen-street-bl.
Pontebaud	22 1/2	22 1/2	21 1/2	21 1/2	10/- Oct. 30 '95	10 0 0	325,000	Spain	30, St. S within s-lane
Pio Pinto	104	105	103 1/2	104 1/2	4 1/2 Apr. 1, 96	100 0 0	436,000	"	"
" (1st Mrs Bida)	—	—	—	—	—	0 19 0	95,000	Servia	120, Bishop-gate-st. Wn
Ripian	5 1/2	5 1/2	5 1/2	5 1/2	7/- Apr 29 '96	3 0 0	625,000	Spain	Glasgow.
Tharale	—	—	—	—	3/ Mar. 21 '96	10 0 0	1,500	Germany	Walbrook Ho., E.O.
West Frus Pre, prof	—	—	—	—	8/ Mar. 31 '96	10 0 0	5,450	"	"
" Prussian Pro.	—	—	—	—	4 1/2 Mar. 31 '96	10 0 0	14,050	"	"
" Prussian Or.	—	—	—	—	1 3/4 Dec. '94	1 0 0	99,634	Prussia ..	17, Victoria-st., S.W
Wenfabrt	—	—	—	—	3/ Dec. '94	10 0 0	9,920	"	"

NORTH AMERICAN MINES.

Alaska Mexican...G	1 1/2	1 1/2	1 1/2	1 1/2	4-5d. Feb. 96	85	160,000	Alaska.....	30, St. S within s-lane
" Treadwell G	4 1/2	5 1/2	4 1/2	5 1/2	1/6 Dec 24 '95	85	200,000	"	"
Anaconda	6 1/2	6 1/2	6 1/2	6 1/2	—	—	—	"	"
Anglo Mexican ...S	5 1/2	5 1/2	5 1/2	5 1/2	1/- Apr. 15 '96	5 0 0	74,850	"	23, College Hill.
Arizona (Prof.) Cu	52 1/2	52 1/2	59 1/2	59 1/2	1/6 Feb. 13 '96	4 0 0	158,920	Arizona ...	74, Geo.-st., Edinbur
" 6% A Deben.	110 1/2	112	112xd	112xd	8 1/2 May 14 '96	100 0 0	4135,300	"	"
" 7% B Deben.	59 1/2	59 1/2	59 1/2	59 1/2	7 1/2 May 14 '96	100 0 0	4181,300	"	"
De Lamar	15/-	15/-	15/	15/	1/- Feb. 13 '96	1 0 0	400,000	Idaho.....	6, Drapers-gardens.
Dickens Custer GS	-9/	1/3	-9/	1/3	—	0 19 9	420,000	"	Winchester Ho. E.O.
Doric	7/8	8/	6/	7/	—	0 5 0	125,000	Colorado...	"
Elkhorn Priority S	1/4d	1/4pm	1/4d	1/4pm	-3 June 26 '96	0 10 0	175,007	Montana	6, Draper's-gardens.
Gen. M'g. Assoc. ...	6 1/2	7xd	6 1/2	7xd	12/- May 14 '96	5 10 0	27,469	C. Breton	Blomfield House.
Golden Feather G	9 1/2	11 1/2	9 1/2	11 1/2	10/-	1 0 0	180,000	California	St. Stephens Os E.O.
" Gate	3/	4/	3/-	4/-	—	0 19 6	79,600	Montana	8, Draper's Gardens.
" Leaf.....G	1/	1/8	1/-	1/-	—	1 0 0	300,259	Arizona ..	6, Draper's Gardens.
Harquahala.....G	3/	3/6	2/6	3/6	-6 Nov. 11 '94	1 0 0	300,000	Arizona ..	6, Draper's Gardens.
Holcomb Valley G	/8	1/-	-/6	1/	5/	0 5 0	540,000	California	14, Cornhill, E.O.
Jackson Goldfields	/8	1/3	/8	1/-	5 0	0 5 0	408,635	"	11, Foultry, E.O.
La Plata.....S	1/	1/3	1/	1/3	5/ 1/3 Oct. '82	0 4 6	405,000	Colorado	11, Foultry, E.O.
La Yeaca	1/9	2/3	1/9	2/3	—	0 19 6	200,000	Mexico ...	20, Bucklersbury, E.O
Montana	7/3	7/8	7/3	7/9	-3 Mar 27 '96	0 19 0	657,158	Montana	Gresham House, E.O.
New Guston	3/4	3/4	3/4	3/4	1/- Oct. '92	1 0 0	110,000	Colorado	25a, Old Broad-st.
Palmarajo	2/6	3/	1/9	2/3	—	1 0 0	418,888	Mexico ...	32, Old Jewry, E.O.
Pinos Altos(D)GS	3/4	3/4	3/4	3/4	-8 Mar. '90	1 0 0	100,000	"	110, Cannon-street.
Richmond ...GSL	3/4	1/4	3/4	1/4	1/- Dec. 16 '95	5 0 0	54,000	Nevada ...	44, Coleman-street.
St. George	/9	1/3	/9	1/3	5/	0 4 9	—	G'ogin USA	S. Geo Ho., E'cheap
Sierra Buttes ...G	1/4	1/4	1/4	1/4	-3 Apr. 29 '96	2 0 0	122,500	California	132, Leadenhall-st.
" Pumas Eur. G	1/4	1/4	1/4	1/4	-8 Apr. 29 '96	2 0 0	140,265	"	"
Springdale.....G	/9	1/-	/9	1/	-2 Sep. 28, '9	8/	1,000,000	Colorado	20, Abchurch Lane.
Twin Lake Placers	1	1 1/4	1	1 1/4	3/- Feb. '93	1 0 0	26,000	"	5, Lawrence P. H. H

SOUTH AND CENTRAL AMERICAN MINES.

Anglo-Chilian P/N	10 1/2	11	10 1/2	11	7/0 Feb. 27 '96	10 0 0	35,000	Antofagat.	123, Bishopsgate-st W
" 6% Ryland MB	110	113	109	110	6 1/2 Jan. 2 '96	100 0 0	4200,000	S. Luis ...	37 & 5, Queen Street W.
Argen. Concessions	1/8	2/	1/8	2/	2/	0 2 0	150,000	"	"
Caratal.....G	1/	1/6	1/	1/6	2/6	0 2 0	1,300,000	Venezuela	57, Moorgate-st. E.O
Cayulima.....S	3/4	1	3/4	1	1/- Apr. 94	2 0 0	125,000	Peru	52, Leadenhall-street
Colon	-1/3	8	-1/3	8	5/	0 4 0	260,000	Colombia	5, Cophthal-bldg., E.O
Colorado Mt.N	1 1/2	2	1 1/2	2	2/6 Dec. 16 '95	5 0 0	32,000	Chili	12, King-st., Liverp
Colombian Hy...G	3/4	3/4	3/4	3/4	1/- Jy 26, '95	1 0 0	75,000	Colombia	10, Blomfield-street
Coplapo	2 1/2	2 1/2	2 1/2	2 1/2	2/ May 29 '96	1 0 0	100,000	Chili	Dashwood House, E.O
Darien "A".....G	7 1/2	8	7 1/2	8	—	1 0 0	49,552	Colombia	Manchester.
" "B".....G	9	9 1/2	9	9 1/2	10 Nov. Apr 29 '96	1 0 0	30,000	Colombia	"
Don Pedro.....G	1/	2/	1/	2/	—	1 0 0	132,102	Brazil	24-5, Devonsh. Ca E.O
El Callao	3/4	3/4	3/4	3/4	9 1/2d. Feb. '96	5 0 0	257,600	Venezuela	5, Bishopsgate-st, Wn
Frontino & B...G	15 1/2	15 1/2	15 1/2	15 1/2	6d. Jan. 16 '96	1 0 0	122,662	Colombia	144, Gresham House
Glenbrook.....G	1/9	2/3	1/9	2/3	—	1 0 0	199,948	Arg. (& I.)	3-5, Queen-street, E.O
Gravel	2/8	1/8	2/8	1/8	—	1 0 0	100,000	Honduras	10, Blomfield-street
Guanalope.....GS	3/6	5/	3/6	5/	—	1 0 0	122,000	Honduras	14, Union et. Old Br
Jaila Taltal	3/4	3/4	3/4	3/4	—	1 0 0	105,234	Nicaragua	139, Cannon-street.
Lagunas	2 1/2	2 1/2	2 1/2	2 1/2	15 p.c. Dec. '94	5 0 0	120,000	Tarapaca	3, Gracechurch st.
Lautaro	6 1/2	7 1/2	6 1/2	7 1/2	5/- Dec. 30 '95	5 0 0	110,000	Chili	70, "
Liverpool	8	9	8xd	9	5/ Oct. 16 '95	5 0 0	22,000	Colombia	5, Moorgate-st. E.O
Loma	1/8	1/8	1/8	1/8	10/-	1 0 0	300,000	Colombia	5, Cophthal-bldg., E.O
London Nit.....G	1 1/2	2 1/2	1 1/2	2 1/2	3 1/4 Nov. '95	5 0 0	14,000	Chili	9, Gracechurch-st.
" Nit.(Pref.)	3 1/2	4 1/2	3 1/2	4 1/2	5 1/2 Nov. 28 '95	5 0 0	22,000	"	"
Masato	1/-	1/6	1/	1/6	2/	0 2 0	200,000	Peru	11, Old Broad-st. E.O
New Tamarugal N	3/4	3/4	3/4	3/4	1s. Dec. '94	1 0 0	130,000	Tarapaca	50, Lime-street, E.O
" 8 % Cum Pref	85	88	86	87	6 p.c. Feb. '96	1 10 0	130,000	"	"
" 8 p.c. Debs	85	88	86	87	6 p.c. Feb. '96	100 0 0	4260,000	"	"
Orita	1/	1/6	1/	1/6	1/- April '89	1 0 0	30,000	Colombia	10, Blomfield-street
Ouro Preto	—	—	—	—	1/- Feb. '95	1 0 0	80,000	Brazil	6, Queen-street-place
Pao. & Jazampapa N	1 1/2	1 1/2	1 1/2	1 1/2	4/- May, '95	5 0 0	72,000	Tarapaca	3, Gracechurch-st.
Phoenix	/9	1/-	-/9	1/-	—	0 8 0	400,000	S. Luis ...	3 & 5, Queen Street.
Quebrada	1/4	3/4	1/4	3/4	5 % Mar. '92	3 0 0	44,958	Venezuela	8, Nicholas Lane.
Rosario	5	5 1/2	5	5 1/2	5/- Feb. 13 '96	5 0 0	120,000	Chili	7 1/2 Old Broad-stree
" (b % Deb.)	104	107	104	107	5 % Apr. '96	180 0 0	4475,000	"	"
" Hu'r Do Serp	106	109	106	109	5 % Jan. 2 '96	180 0 0	4200,000	"	"
St. John del Rey G	20/-	21/-	20/-	21/-	10/-	1 0 0	327,652	Brazil	Finsby Ho., Bimf'd st
San Donato	3/4	1 1/2	3/4	1 1/2	2/6 May 24 '95	5 0 0	35,000	Chili	12, King-st., Liverp
" Jorge	5 1/2	6 1/2	5 1/2	6 1/2	5/ Oct. 16 '95	5 0 0	75,000	"	9, Gracechurch-st.
" Pablo	2 1/2	2 1/2	2 1/2	2 1/2	5/- Oct. 30 '95	5 0 0	35,000	"	"
" Sebastian	1 1/2	1 1/2	1 1/2	1 1/2	5/ May 24 '95	5 0 0	35,000	"	"
Santa Barbara ..G	3/4	3/4	3/4	3/4	10/-	0 10 0	80,000	Brazil	Dashwood House E.O
" Elena	3/4	3/4	3/4	3/4	5/- Nov. 15 '94	5 0 0	22,000	Tarapaca	3, Gracechurch-st.
" Rita	3 1/2	4 1/2	3 1/2	4 1/2	10/ May 24 '95	5 0 0	20,000	Chili	Dashwood House, E.O
Tolima	8	8	8	8	5/- Mar. 11 '96	5 0 0	14,000	"	13, Finsbury-greens.
" "B"	4 1/2	5 1/2	4 1/2	5 1/2	5/- Mar 12 '96	5 0 0	6,000	"	"

LATEST FROM THE MINES.

CABLEGRAMS AND TELEGRAMS.

ALADDIN'S LAMP.—The following cablegram has been received from the superintendent at the mines:—"Four weeks' return totals 1259 ounces of gold (approximate value, £4820)—namely, 242 tons of ore have been crushed, yielding 1016 ounces, and 4 tons rich crude ore have been shipped, containing 243 ounces."

ALASKA TREADWELL.—Cablegram from Alaska reports the clean up for the month of May as follows:—"Period since last return, 30 days; bullion shipment, \$55,273; ore milled, 22,276 tons; sulphurets treated, 372 tons; of bullion there came from sulphurets, \$17,695. Gross expenses for period not able to state."

BROKEN HILL PROPRIETARY.—The available yield for the week ending May 21 was 7538 tons of ore, yielding 431 tons of lead, containing 145,865 ounces silver. The price of the shares in Melbourne is £2 11s. 6d. buyers. The ordinary half-yearly meeting of shareholders will be held in Melbourne on July 30.

BULTFONTEIN STAR DIAMOND.—A cablegram has been received from the head office, Kimberley, announcing that at the extraordinary general meeting, held on Wednesday, May 27, the resolutions proposing the amalgamation of the property of this company with neighbouring properties, passed at the meeting held on May 12, were confirmed.

CONSOLIDATED MURCHISON.—Result of crushing for month: 1010 tons crushed, producing 594 ounces gold.

CROWN UNITED.—Consulting engineer reports from the mine: Mill will be running by end of July.

GOLDEN CEMENT.—Cable received from the company's agent:—"Have struck Macauliffe's reef. The lode is well defined. By next mail full particulars will be sent. Water making 1600 gallons daily."

GREAT BOULDER MAIN REEF.—The following cable has been received from the company's agent at Perth:—"A trial crushing of 100 tons (at the Leviathan battery) has yielded 397 ounces 3 dwts. of gold. The assay of tailings shows a loss of 3 ounces of gold per ton. The ore is milling better than we anticipated. The mine is looking splendid.—Macklin."

GEM OF CUE.—In view of the recent advices from the mine by mail and cable, the board have cabled for a full estimate of the ore reserves, with a view to the early erection of a suitable crushing plant.

HAURAKI.—Monthly crushing. The directors have received the following telegram from the manager, viz:—"Total amount crushed 350 tons, ounces of gold 2039, approximate cost £1750, profit £4500. No. 2 reef 220 north produced 18 lbs. fair specimen stone."

HOPE'S HILL.—The owners of this property on Monday received further confirmation of the rich discovery in the lower level tunnel. The ironstone veins there disclosed were previously reported to be 2 feet 6 inches in width, and the last cable announces that the assay value by mill test is 3 ounces of gold to the ton of 2240 lbs.

HANNAN'S BROWN HILL.—Manager cables: "First clean up 96 tons (of 2000 lbs.) gave 462 ounces."

JOKER (Yalgoo).—Mr. Harvey Pridham, one of the mining engineers on the staff of the Anglo-American Exploration Company of Western Australia (Limited), has reported on the Joker Yalgoo Gold Mines (Limited), under date May 20, as follows:—"Have the highest opinion of Joker. The mine looks splendid."

JOKER (Yalgoo).—Copy of cable received from the company's agent at Perth, Mr. C. C. Macklin, dated 25th inst.:—"Manager satisfied there is water power sufficient to run 20 stamps. . . (code word undecipherable) to order another 10-head battery complete."

KURNALPI.—The following cable, dated May 26, has been received from the company's local secretary at Adelaide:—"Lease 1211 very promising. Prospects are encouraging. New shaft 1213."

KOMATA REEFS.—The directors have received the following telegram from the manager, viz:—"Have struck rich ore in Argall's lode."

LIMERICK.—A cable has been received as follows:—"Have arranged to commence crushing 200 tons of ore next week."

LOCHINVAR.—Cablegram from the mine manager:—"Have struck hanging-wall in the shaft at 100 feet; contains visible gold."

MONASTERY DIAMOND.—A cable dated May 23 states:—"The average yield for last week was 20½ carats per 100 loads."

McKENZIE GOLD.—Mr. Frank Nicolas, M.I.M.E., the company's consulting engineer, confirms his cable of the 8th April notifying that he will commence crushing on the 15th inst. He adds that he expects to equal the returns of the Burbank's Birthday Gift from the shallow levels, and thinks he will even do better than that mine in the deeper levels.

MENZIES CRUSOE.—Cable information is to hand from the manager at the mines to the following effect:—"Start crushing to-day (May 25) 10 stamps. Stone from Robinson Crusoe north shaft B 27 feet level."

MENZIES PIONEERS.—Copy of cable from mine manager, dated May 23:—"1404 north west shaft crosscut on the 39 foot level 7th day of May vein at 39 feet, thickness 6 inches 43 dwts. (2 ounces 3 dwts.) per ton; 14th day of May vein at 53 feet, thickness 2 feet 57 dwts. (2 ounces 17 dwts.) per ton."

MENZIES GOLD REEFS PROPRIETARY.—Cable information is to hand from the manager at the mines to the following effect:—"Start crushing to-day (May 25) 10 stamps; stone from Friday claim, water shaft, underlay shaft."

MENZIES WATERWORKS.—The directors have received the following cable from Mr. Reid, the local director at Coolgardie:—"Have completed pipe line to Menzies Gold Reefs Proprietary batteries; everything is very satisfactory. Mill commenced running."

MILLS' DAY DAWN UNITED.—Cablegram from the head office in Charters Towers:—"Have crushed during the month 1042 tons of quartz for a yield of 466 ounces of gold. The approximate value of this return is £1600."

NERBUDDA COAL AND IRON.—The coal sales for the month of April amount to 2240 tons.

NEW QUEEN.—Cablegram dated Charters Towers, May 23, gives result of crushing for past fortnight as follows:—"No. 1 formation 153 tons, yielding 136 ounces gold. This is final from this portion of the mine for the present. No. 5 formation 1270 feet 101 tons, yielding 65 ounces gold. Have drawn upon you for £900. Have shipped per s.s. Duke of Buckingham 585 ounces gold."

NEW MODDERFONTEIN.—Adverse rumours as to the result of recent developments at the mine having been circulated, and a statement made that work had been stopped, a cablegram asking the actual state of affairs was addressed to the head office, and the following reply has been received:—"There is no truth in the rumour; stopped for want of coal few days; machinery working well."

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NORTH BOULDER.—Confirmation of the doubtful word in the cablegram of May 22 has been received. The cablegram, therefore, reads as follows:—"Discovery is of great value in the west shaft; average assay value per ton of 2240 lbs., 24 ounces; picked sample, 60 ounces; ore shows heavy visible gold."

RIPANJI QUICKSILVER.—Manager reports:—"Mill produced from April 20 to May 16, 29,977 kilos concentrates, against 26,771 kilos for previous four weeks."

ROYAL SOVEREIGN.—The following cable has just been received from the agent at Coolgardie:—"Have received telegram from manager. Have struck rich ore in winze, averaging 5 ounces to the ton."

SAN SALVADOR SPANISH IRON ORE.—The s.s. Etna sailed from Santander on the 25th inst. with a cargo of this company's ore for Rotterdam.

SOUTH MOUNT LYELL.—The following cablegram (delayed in transmission) has been received from the company's head office in Melbourne:—"10 feet solid hematite; presence Lyell pyritic body now assured. Developments opening up splendidly."

TALISMAN.—Cablegram from the company's consulting engineer, dated May 21:—"Have just visited property. The general results of my inspection are very satisfactory. Confirm important discovery of ore (Talisman) west block. Fine body of ore. The whole of the machinery is now on the mine. Mill site completed. Erection of machinery is being vigorously pushed, stopes looking exceedingly well. Ore reserves have been largely increased by recent developments."

TATI BLUE JACKET SYNDICATE.—The directors have received a cable message from the general manager at Tati announcing that crushing with the 10 stamp battery commenced on the 26th inst.

UNITED GOLD FIELDS OF MANICA.—Translation of a cable from Mr. Ferguson, dated Umtali, May 23:—"Shaft. 1 At a depth of 132 feet at the water level have intersected vein; the vein is fully 6 feet in width.—Shaft 4. Have driven upon the vein a distance of 10 feet; the vein is fully 2 feet in width. List of assays as soon as possible.—Official note: The bottom of the shaft 1 is now nearly at the level of the old adit No. 1, distant about 250 feet to the east."

UNITED GOLD REEFS.—The following cablegram has been received from the manager:—"Have struck vein in the crosscut. The value of the trial crushing is 88 dwts. per ton of 2000 lbs. The machinery has been received with the exception of pans."

VICTORIA ASSOCIATION (Charters Towers).—The following cablegram has been received at the London office:—"302 tons crushed yielded 555 ounces gold."

ZEEHAN-MONTANA.—The following cablegram has been received from Hobart, dated 23rd inst.:—"Have shipped 200 tons of silver lead ore containing about 140 tons of lead and 18,000 ounces of silver."

ZAPOPAN MINES.—The following is from a cablegram just received from the mine manager:—"Crushed 120 tons, 166 ounces gold, 350 tons from the surface, 71 ounces gold. The men working on tribute are now raising on the north ore of fair grade. Good ore is still being found at the south end." The following cable has also been received:—"Mill working day and night, ore continues so far very good."

The Wemmer Gold Mining Company (Limited) is just advised by cable that the extraordinary general meeting, called for May 28, has been adjourned until June 29.

THE ROME CONSOLIDATED GOLD MINES, LIMITED.

COOLGARDIE, WESTERN AUSTRALIA.

CAPITAL.

£100,000, in 100,000 Shares of £1 each.

The PROSPECTUS of this COMPANY

will be advertised on

MONDAY NEXT, JUNE 1st.

SECRETARY (pro tem.).

J. W. SCOTT.

OFFICES.

Crosby Buildings,
Great St. Helens, E.C.

COMPANY FINANCE.

Reports, Balance Sheets, Dividends, &c., of Mining and other Companies.

GRESHAM GOLD EXPLORING SYNDICATE.

The directors announce that they have declared a further interim dividend to all shareholders registered on the books of the syndicate on Monday, June 8, 1896, of 20 per cent, being 1s. per share on the shares 5s. paid, and 4s. per share on the fully-paid shares (less income-tax), making with the dividend paid in October last an interim distribution of 40 per cent. The directors have also decided to distribute by way of bonus one fully-paid share of the Whitehead and Sultan Gold Mines, Limited, for every two shares held in this syndicate, 5s. paid, and two fully-paid shares of the Whitehead and Sultan Gold Mines, Limited; for every one share in this syndicate, fully paid. The dividend will be paid on or after Monday, June 15, at the bankers of the syndicate, Messrs. Smith, Payne & Smiths, 1 Lombard Street, London. Dividend warrants will be posted on June 13, together with the notice of rights in respect of the bonus distribution of Whitehead and Sultan Gold Mine shares above mentioned. The transfer books of the syndicate will be closed from Monday, June 8, to Saturday, June 13, 1896, both days inclusive, for the purpose of preparing the dividend warrants. The syndicate's financial year ends on June 30 next, at which date the books will be closed for audit, and the balance-sheet issued as soon thereafter as receipt of accounts from West Australia will permit. The last reports from the Whitehead and Sultan Gold Mines Limited, and the City of London Gold Mines Limited, in which the syndicate is interested, are satisfactory. On the Whitehead Mine No. 1 shaft is down 100 feet, and No. 2 shaft 163 feet, the distance between the two shafts being 324 feet, and the reef at the 100 feet level is reported as being 3 feet to 4 feet wide. A drive is now being put in at this level to connect the two shafts, and the mine manager reported on May 9 having "struck very rich ore at this 100 feet level." The excavations for the reservoir were pushed forward, notwithstanding the great heat and scarcity of labour, and, as a result, the company's reservoir caught some 200,000 gallons of water from the recent rainfalls. Water is also expected to be reached in the shafts shortly. The City of London Gold Mines—On this property good progress has been made. In addition to the important announcement that water had been struck at a depth of 166 feet, the mine manager reports having over 500 tons of stone at grass, and that from the underlie shaft he has taken out 160 tons of stones which, according to prospects, should average over 2 ounces to the ton, besides a few hundredweights of stone picked, which would go 2 ounces to the cwt. of stone (equal to 40 ounces to the ton). Liverpool Mine—This property, of about 14 acres, has been recently acquired by the syndicate, and is now being opened up and developed with a view to reselling same; the mine immediately adjoins the City of London Gold Mines. Developments at present are not sufficiently far advanced to enable any definite conclusion to be arrived at; but already several small reefs have been discovered, and it is anticipated that the main reef of the City of London Mine will be found to traverse the property. City Exploration Company of West Australia Limited.—The syndicate has a substantial interest in this Company, which is carrying on operations in the Murchison and North-West Districts, and has as its engineers and prospectors, the Brothers Connolly, of whom John F. Connolly was the discoverer of the Murchison Goldfield, and received the Government reward. The North-West District of West Australia is greatly coming into prominence, and has received much of the attention of Mr. A. F. Calvert, and of other explorers. Coolgardie Offices.—The syndicate has built convenient and commodious offices on a block of freehold land, which was bought in the town of Coolgardie, and which increases in value and forms a substantial asset.

NEW CHUM GOLD MINES (LIMITED).

The directors, in a circular to the shareholders, state that they are glad to have an opportunity of congratulating the shareholders upon the excellent progress made upon the property since the management has been controlled by the local board, and the mining operations personally supervised by Mr. L. A. Samuels. Very shortly after the arrival of Mr. Samuels in Bendigo, the mining staff were rewarded for their energy and perseverance by the cutting of a saddle formation which proved to be of considerable magnitude, as was anticipated by those previously in charge from the appearance of the overlying strata and the enormous inflow of water. As to the yield of gold from the new reef, Mr. Samuels says: "The cutting of this reef ensures the future success of the mine, as I entertain no doubt as to its value"; whilst Mr. George Phillips, the underground manager, writes that the reef promises to be of enormous size, its width having already been proved to be upwards of 14 feet at the cap. By order of the board a trial crushing was made of some 20 tons of ore, which resulted in a return of 6 ounces. Mr. Samuels' cable of the 18th inst. says that he intends "opening out east in three weeks' time," when the position of the workings should enable the manager to maintain continuous crushings of high grade ore, and that the reef will prove much richer as depth is attained. The main shaft is now nearly 600 feet deep.—Southern New Chum Gold Mines (Limited). The latest cables as to developments, which have been duly published, announce the cutting of the Lawrence reef, showing gold at a depth of 140 feet from the surface; and, further, that the machinery is completed and has started working. The total depth of the new main shaft is now 192 feet. In view of the encouraging prospects of this subsidiary company, and at the request of numerous shareholders that a distribution of the bonus shares should be made, your directors have resolved to distribute, by way of interim dividend, a portion of the fully paid shares received by your company as part purchase consideration for that portion of the property sold to the Southern New Chum Company. This distribution will be made to all shareholders in the New Chum Gold Mines (Limited) registered in the books of the company on June 1 next, in the proportion of one share in the Southern New Chum Gold Mines (Limited) to every four shares held in the New Chum Gold Mines (Limited). This, taking the shares at their par value, represents a dividend of 25 per cent. The directors think it right to point out that as the line of reef runs longitudinally through the properties of both companies, the intrinsic value of the properties should be same. The Lawrence Reef first met with in the Southern New Chum Company's ground is the reef which yielded such handsome results in the upper levels of the New Chum Company's property.

THE CAPE COPPER COMPANY

At a meeting of the directors of this company, held on Wednesday, it was resolved:—"That a dividend of 2s. per share be declared on the cumulative preference and ordinary shares, free of income-tax, payable on the 1st day of July, 1896, to the shareholders on the books of the company on June 5, 1896, and that the transfer books be closed during the said June 5, 1896. Preference coupons No. 9 and ordinary coupons No. 21 will be paid at the above rate, free of income-tax, on presentation at the company's office."

RAND ROODEPOORT.

The secretary of the company has issued the following circular to the shareholders: Since my circular of January 6, extensive and satisfactory work has been done on the property. Several large cuttings have been made at right angles to the run or strike of the outcrops and shafts have been sunk on the most promising reefs. By continuing these operations, our manager advises that later on money will be saved, as we shall be able to decide more definitely which are the best and most likely to prove payable reefs; to commence mining on, and determine with greater certainty the position of our main and ventilating shafts, &c., for future operations. Our manager reports that the various leaders have increased in width and are coming together, and with increased depth will doubtless form good and payable reefs. Owing to the recent events in the Transvaal, work on our property, in common with other mines in the district, has been seriously impeded, but we hope to hear in our next advices that the labour difficulty is at an end.

— Share certificates for transfer, lodged for registration in the RANDPONTIN ESTATES GOLD MINING COMPANY (LIMITED) up to April 1, are now ready for delivery by the London agents, Robinson South African Banking Company (Limited), No. 1, Bank-buildings, Lothbury, E.C.

— The CAPE COPPER COMPANY (LIMITED) has declared a dividend of 2s. per share on the cumulative preference and ordinary shares, free of income tax, payable on July 1.

— A dividend of £25,000, being 6d. a share for the month of May, is payable on June 1 on the shares of the MOUNT MORGAN GOLD MINING COMPANY (LIMITED).

— The liquidator of the NEW VIRGINIA TRANSVAAL GOLD MINES (LIMITED) has given notice that, in view of the approaching reconstruction of this company, the transfer books will be reopened for the registration of transfers up to, and including, Saturday, the 6th day of June next. The liquidator's address is 26, Budge Row, London, E.C.

— The BROKEN HILL PROPRIETARY COMPANY (LIMITED) reports that the usual dividend of 1s. per share has been declared, payable on June 17, the books for which will be made up on the morning of the 3rd of that month.

— The list of applications for shares in the NEW AUSTRALIAN BROKEN HILL CONSOLS (LIMITED) will close on Saturday, June 6.

— The coupon No. 37 of the Ten per Cent. Mortgage Debentures of the PESTARENA UNITED GOLD MINING COMPANY (LIMITED), due on June 1, will be paid on presentation at the office on or after that date.

HOMER GERMAN RAILWAY TARIFFS AND THE BRITISH COAL TRADE

The British Consul at Stettin reports on certain alterations in the railway tariffs on coal from the Silesian mines to the coast, which are designed to enable German coal to compete "against the increasing inroad which the import of English coal has been making of late years on the Prussian Baltic coast, and especially in the district round the Oder watercourse." Mr. Powell mentions that for several years the Upper Silesian Coal Syndicate has endeavored to obtain from the Government tariff reductions for the carriage of Silesian coal to the coast. These have been refused more than once; but on February 15 last, with startling suddenness, the order for reduction was promulgated to come into force on March 1 ensuing. The two ports affected by the new tariff are Stettin and Swinemünde. The latter is almost wholly dependent on the British coal trade, and the population is largely composed of persons connected with the trade. Out of a total import trade of 420,847 tons of goods, British coal amounted to 362,212 tons, and according to a petition of the Corporation of merchants of the town Swinemünde would be ruined by the cessation of this branch of trade. In the case of Stettin, the imports of British coal, amounting to about a quarter of a million tons per annum, form an eighth of the total imports of the city. The total import of British coal to the two ports varies from half to three-quarters of a million tons, while the total production of German coals is over seventy million tons; hence, it is suggested that the object of the reduction cannot be merely to secure for the native coal such a comparatively small trade at the cost of injury to the two towns. It seems, however, that the new tariff has already been in existence for Silesian coals, sent either for export or to coal foreign-going steamers—bunker and export coal—in the shape of a system of drawbacks, and it is suggested that the object now is to put factory owners in the same position as exporters or steamers. But then the reduction is confined to the two ports, so that only a very small area is benefited. The nature of the reduction will be best understood from the following little table:—

To—	Distance. Kiloms.	Tariff per Ton. s. d.
Swinemünde from Silesian Mine	623	.. 8 9½
Stettin " " "	511	.. 7 4½
Eberswalde " " "	499	.. 10 4
Berlin " " "	496	.. 11 3½
Landsberg " " "	448	.. 11 0½
Arenswalde " " "	443	.. 9 7½
Krenz " " "	389	.. 9 7½

Exchange, 20 marks 40 pt. = £1.

These manufacturing centres much nearer to the Silesian mines, where English coal does not compete, do not benefit by the reduction. The lighter and steamship owners on the Oder are loud in condemning the reduction, which, they declare, will ruin them. Competition between them and the railway has already been keen, and this new reduction renders them helpless. The lightermen who will thus suffer number thousands, and are peculiarly helpless, for they have been brought up from their birth on lighters and know nothing else. The facts, the Consul thinks, all point to a speedy resumption of the higher railway tariff; but he urges that British coal exporters must be prepared to hold on to the market, even at a loss for a time. Hitherto the tariff has not stopped British coal, because the latter is at a lower figure than it has ever been for several years. If it rose to 6d., or even 2s. a ton it would be impossible for it to compete with Silesian coal. "It is difficult," concludes Mr. Powell, "as yet to predict what result the reduced tariff will have upon trade here, but one thing seems to be without doubt, and that is that both the mine owners as well as the miners concerned in Great Britain should endeavour to keep the price low in order not to lose a market, which it takes more than 500,000 tons yearly to supply. Once lost, the position will be difficult to regain."

REPORTS FROM THE MINES.

BRITISH MINES.

WARDLE LEAD.—Report on Wardle Company's mines for the year ending May 23: Groverake, 69 fathom level east vein rather more kindly with a little more ore, worth 6 cwt. per fathom. Tribute ore for the week ended at 14 bings.—Bolsburn, Watt's level stops in north flats worth 30, 32, and 34 cwt. per fathom. Stops in south flats worth 10, 30, 26, 30, 16, and 12 cwt. per fathom. Vein stops worth 18 and 10 cwt. per fathom. Driving north flat below level the men have been stopping east from sump, ground lodes fairly well for ore, worth 24 cwt. p. fathom.—Bolsburn, Raco's drift vein a little nippl, only 4 feet wide, worth 10 cwt. per fathom. Stops worth 14 and 14 cwt. per fathom.—Bolsburn, Raco's drift, 4 feet wide of spar mixed with a little ore worth 8 cwt. per fathom. Stops worth 14 and 12 cwt. per fathom.—Quarry level. We have now driven to south part of vein and are working both parts which are only poor, worth 6 cwt. per fathom.—Bedding, Driving 64 level east strong vein. Stops worth 14 level east worth 12 and 13 cwt. per fathom. Driving west in north flats at the random of the 55 level, vein about 3 feet wide of stone and spar with a little ore. Stops above 55 level worth 12, 10, 12 and 12 cwt. per fathom. Ore raised for the week 59 tons. Ore dressed for the week 66 tons. Ore and slag smelted for the week 59 tons, producing 41 tons of pig lead.

FORTUNA.—Mine report, dated May 20, 1896: Cañada Incocha mine.—In the 110 fathoms level driving west of San Pedro's shaft, the lode is small, valued at ½ ton per fathom. We are getting near

to a small cross course. Los Salidos Mine.—The lode in the 212 fathoms level east of Taylor's engine shaft has declined in value in the past week to 1 ton per fathom, but again looks more promising. The 200 crosscut south of the same shaft has passed through a small branch containing spots of ore, but not sufficient to value. In the 92 west of Palgrave's shaft, no change of importance has taken place since last reported. Santos Winze, sinking below the 200 fathoms level is going down in a strong and well-defined lode, worth 1½ tons per fathom.

LINARES LEAD.—Mine report, dated May 20, 1896: Pozo Ancho Mine, Peill's Engine Shaft. In the 200 fathoms level, driving west, the lode continues unproductive. The lode in the 178 west is small and of no actual value. Warne's Crosscut. In the 200 east the lode is regular with good stones of ore. The lode in the 200 west is large and strong, but contains no ore at present. In the 178 west the lode is open and productive in the lower part of the driving, and is valued at ½ ton per fathom. No. 280 winze, sinking below the 178 fathoms level, is going down in a promising and productive lode worth 1 ton per fathom. Los Quintientos Mine: Taylor's Engine Shaft. Good progress is being made in the driving of the 200 fathoms level east, but the lode is still disordered. In the 185 east the lode has declined slightly in value, but we think only temporarily. Its present value is 1 ton per fathom. The lode in the 165 east is wide and strong with patches of ore, worth ½ ton per fathom. In the 150 east, the lode is well formed but only contains spots of ore. Victor's Winze, sinking below the 185 fathoms level. The lode is very small and of no value.

BLAGROVE'S.—The manager reports, under date April 4: I beg to hand you my report for the four weeks ending the 4th inst. During the month no sinking was done in the shaft. The shaftmen timbered up and secured about 20 feet of same, cut ladders for bearers, put in chamber set and excavated road to ladderway. An accident occurred to the set off, which caused a little delay. We have now secured same with strong staples and glands, and put in two new bottom valves. The shaftmen have also been working in the crosscut part of the time. Six men have extended the crosscut 31 feet; the ground has been very bad for shooting, but from indications I am pleased to say a change for the better is coming in. During the month the underground work was thrown back on account of boiler cleaning. A good deal of surface work was also accomplished—viz., excavating for road and building stone wall to still up ground around coal hopper. The smith made three staples and glands for set off mountings for two trucks and other general work. The carpenter made two trucks, several sets of timber, and other general work as required. The other two surface men have been excavating and assisting carpenter or smith as wanted. Machinery and pitwork working well.

KOMATA REEFS.—The manager reports under date April 18: During the past month the various works have progressed as follows:—The No. 2 crosscut, which was commenced from the Komata reef, was extended 28 feet, making a total distance of 72 feet. At this point Argall's reef was intersected about 12 feet in thickness, the hanging-wall branch of the quartz being fully 3 feet wide, and highly payable. The footwall body of stone is 4 feet wide, also giving payable ore. A horse of mullock is standing between the two bodies of payable ore, with a rib of quartz in its centre about 6 inches wide. This rib will, no doubt, join the footwall body when driven on a few feet further north. Samples have been taken from the two main portions of the lode, and, if possible, results will be sent by this mail. The drive on Argall's lode from the main crosscut has been extended 12 feet 6 inches. A small drive was also put in 7 feet on the hanging-wall to test the width of formation. The lode at present is not so large as formerly, being rather mullocky, but still splendid prospects can be got by pounding the ore, and I have no hesitation in saying that shortly the ore body will regain its usual size. The contractors, where driving the main crosscut, have extended it 26½ feet, making the total length driven 335 feet, or 235 feet east from Argall's lode. The only item of any consequence during the month was the intersection of a new reef, 2 feet wide, in this level. The ore, however, does not appear to be payable as yet. This crosscut is still being pushed ahead with the object of cutting Lavington's lode, which on the surface is very rich, and there is every reason to believe that, when intersected, rich ore will be the result. Very probably, before meeting with Lavington's lode, 40 feet or 50 feet more will have to be driven. The other works are progressing fairly well. The contractor for supplying mining timbers has delivered 36 props, 12 caps, and 100 slabs. The contract for clearing the new battery site will be completed in a few days. On the water race the bench has been formed about ½ mile. About ½ mile of clearing has been done, the dams are in course of construction, and the men are working on the third one, laying in stringers, &c. On this work 32 men are employed, and things generally are going on satisfactorily. I am sorry to say the construction of the road up the creek is not being pushed forward as energetically as I should have wished. I have again applied to the County Council asking them to expedite the work so that we can get our machinery over.

NEW HAURAKI GOLD PROPERTIES.—The manager reports under date April 15: I beg to hand you the following report of operations since my last. The country rock in the deep level crosscut has been and is unusually hard for good progress. Total distance driven is 416 feet, being 31 feet for the month by eight men, and will take some 64 feet further approximately to intersect the underlay of the South Tokatea reef. At a point 143 feet in the deep level east and west a short crosscut was driven south, which intersected in 9 feet a large strong reef running east and west, and underlaying south. The width of the reef is 4 feet, composed mainly of quartz charged with iron pyrites. Nichol's deep level crosscut still continues in tough andesite country, though somewhat improved these past few days for driving, having met some strong heads of ground. Total distance driven 133 feet for the month, 32 feet by six men. The Queen crosscut is driven for the month by two men 45 feet; total distance, 62 feet. The country is of a pale-blue sandstone, getting somewhat harder. Owing to the rain this week, it will require six sets of timber from the month in. Prospecting crosscut No. 1 is driven 35 feet by two men, and is much the same class of country as the Queen crosscut. Its course is due west, and will probably intersect the split-off from the main Tokatea reef, plainly outcropping near our south boundary line, besides proving any other reef which may be out in this new and unexplored 1½ acre section.—Prospecting crosscut No. 2 measures 11 feet by two men. Country of dark grey sandstone, shaley and fairly compact. Its course is due north, right into the heart of the section.—In conclusion, in another month we shall be on the eve of cutting the South Tokatea reef, thus draining the winze above. If perchance when cut it is not found gold bearing, it will be necessary to thoroughly test a reef of this description by rising and sinking the winze through, and opening intermediate reefs from. Nichol's deep level crosscut in another month, provided the rock does not get harder, will be getting up to the lowest level worked carrying Nichol's reef. From the appearances of the reef going below in the winze, which assayed 4 dwts. to the ton, the cutting of this reef at this depth will be an important development. The Queen crosscut is in good auriferous rock. The same remark will apply to No. 1 and No. 2 prospecting level in new sections acquired. I have great hopes of mines generally throughout; but all our developments, as you are aware, are at present in dead work. This overcome, and our company enabled to operate on different reefs, should open up a good property. Number of men employed, 80.

OME GOLD MINES OF VICTORIA.—The following is from the mining manager's report:—I have extended main tunnel 25 feet by contract, total 194 feet. South drive extended 14 feet on the western reef, total 40 feet. Have not got under the shoot of stone yet. Reef about a foot wide, carrying fair gold. Country passed through in main tunnel schist, very wet in the face, seams of mineral carrying splendid gold; 1 expert to strike a big lode any day, as all the heads have got mineral on, and a little gold on them all. I am pretty sure the mineral we are getting on the heads in the main tunnel is coming from a lode up the hill. North

drive on western reef extended 19 feet, total 169 feet. Reef in face 3 feet carrying gold, country dyrite and veins of soft slate. Lena tunnel extended 35 feet, total 140 feet. Reef 18 inches, very fair gold. Winze on the Lillie sunk 12 feet, total 41 feet. Reef 5 feet in the bottom, some very rich stone through the reef. Tunnel on the Lillie drove 16 feet, total 16 feet.

PREECE'S POINT PROPRIETARY.—The manager reports, under date of April 5:—The following is my report for the month ending April 4: Sinking engine shaft. During the month the shaft has been sunk 29 feet, making a total depth of 93 feet. The shaft has been securely timbered all the way, and the direction kept perfectly vertical. During the month the ladders have been moved and the necessary collars put in. When the connection was made between the shaft and the adit level, the windlass was moved from the surface and erected in the shaft at the level of the chamber, thus saving some 60 feet or more in winding.—Driving crosscut. During the past month a chamber has been cut and the necessary connection made with the crosscut. The holing was made on March 14, both direction and levels as calculated from survey coming out exactly right. During the month prospecting has been carried out on the easterly portion of the property. So far we have succeeded in finding three leaders, two of which outcrop in our ground, and the other dips towards the company's property. In some parts of the claim there is plenty of loose gold to be found on the surface, but owing to the depth of surface covering, it is extremely difficult to find the source from which it came.

SUCCESS GOLD MINES.—The manager reports, under date April 15:—I beg to hand you the following report for the month ending April 4:—Good progress has been made this month in the big reef crosscut, having driven 64 feet by eight men, making a total of 318 feet. One new feature is the appearance of bars of iron pyrites at times, and the country rock looks much better than hitherto, and greatly improved for driving. During the next month the large reef No. 2 ought to be intersected by this crosscut, the same reef being cut through in James's level; crosscut about 39 feet. A winze is now being sunk in James's level 22 feet from James's crosscut, where some picked stones were obtained in James's time. Present depth of winze 17 feet, timbered with three sets by six men for little over a week. The reef is 6 inches wide, and has produced prospects of gold; underlies to the north, and is being sunk now on the footwall. At the extreme east end of James's level 212 feet in, a crossvein is intersected running 35 degrees south of east, which has been driven on for about 20 feet this past week by four men. Its underlay is 3½ feet to the fathom, westerly, width 15 inches, and composed of gritty sandstone and iron pyrites. James's west end measures 199 feet, being 51 feet by two men for the month. This end is nearing the surface, as this morning tree-roots made an appearance. By sounding they will come out on the line of supposed outcrop, a short distance below McDonald's level. The pair of men in McDonald's level have holed through into James's west rise, a distance of 58 feet from their mallock shoot. The reef nearly all the way produced good crushing dirt. This section has opened up a good block for stamping. The level going north from No. 2 Success winze is in 40 feet, by two men. Reef 10 inches wide, showing quartz, and very hard, with water percolating through. Two men commenced a few days ago to crosscut from No. 3 Success reef to Success intermediate reef, starting from the "sollar" in the winze. Probable drive 15 feet, in very hard country, highly charged with iron pyrites. In conclusion, we are fast approaching James's east and west reef in our deep level big crosscut. We have cut two winze plots, which has thus enabled us to resume driving on James's level east. We are at present engaged confining our sinking to one winze, but the influx of water, I fear, will be too powerful for manual labour. To open up this section available for the stamps, we must cut the reef in our deep level. We can then both rise and sink at both points of winzes. We have already got good section of ground opened up above James's level to surface, which on being stoped out should yield good payable ore for the stamps. By the time the stamps are ready the greatest portion of our deadwork will be overcome. We shall have facilities to develop the reefs, and the future of the mine will be, month by month, more interesting, and I trust will be satisfactory.

TARARU CREEK.—The manager reports under date April 18: I beg to submit the following report on the work done in the mine during the four weeks ending 11th inst.—Norfolk section. Three stopes are in progress above the intermediate level on the California reef. The reef in these stopes varies from 1 foot to 4 feet in thickness, and is of a soft rabby or clayey nature, and by dish process gives fair prospects of free gold. The connection has never been completed between the intermediate and the low level, the distance between the two levels on the underlie of the reefs being 101 feet. The reef at this point is fully 6 feet in width. The ore coming from here is very heavy mineralised. The second rise from the low level has been carried up a further height of 12 feet, making a total of 25 feet. The reef in the back is about 4 feet in thickness, turning out a good supply of ore. The contractors have driven the Missouri main crosscut 32 feet, making a total distance driven from the California reef 280 feet.—Dandelion section. The present low level on the Day Dawn reef has been extended 21 feet, making total distance of the line of reef 238 feet. The lode in the face is 4 feet in thickness, and colours of gold are frequently seen when breaking down the ore. The rise from this level has been put up a height of 15 feet, where the reef is fully 3 feet wide, and from appearance a good class of ore is coming in from the hanging wall portion. The tributary level on the same reef has been extended a further distance of 12 feet, making the total distance driven on the reef at this level 257 feet. The reef in the last breaking down showed a width of 5 feet, and has a very kindly appearance. In the intermediate under the tributary level 106 feet have been driven on the line of reef. The reef averages 2 feet 6 inches in thickness, and has turned out a good supply of crushing dirt. Three stopes are in progress west of the winze over this level. On the eastern side of the winze four stopes are being carried along, and a little gold has frequently been seen. The drive on the parallel lode has been extended 29 feet, making the total distance driven on the reef 62 feet. An improvement has taken place here. The reef varies from 18 inches to 2 feet in width, and at times shows gold freely. The drive on the City of Dandelion reef at the low level has advanced 300 feet, making the total distance driven 477 feet. The reef is fully 6 feet wide, and contains ore of a low grade. Since intersecting the California reef at this level 39 feet have been driven west of the crosscut. The reef for this distance averages 3 feet in width, but so far no gold has been seen in the stone. The battery tunnel has been cleaned out and repaired a further distance of 218 feet, making the total distance now in repair 1418 feet. Since last cleaning up about 300 tons of ore have been put through the battery. On cleaning up there were 95 ounces 10 dwts. of retorted gold from 459 ounces of amalgam. This was reduced on melting to 93 ounces 13 dwts. The tailings have all been saved ready for treatment by the cyanide process. We reckon that we are not saving much more than 20 per cent. of the gold contained in the ore by the present process of amalgamation. The cyanide plant is now being erected as fast as possible. The stands for the vats are in position, and the alteration of the building nearly completed. Therefore, in a few weeks' time we shall be able to treat the ore by this process, which will make a considerable difference in our returns of gold.

NORTH BURGESS.—Main shaft has been sunk 120 feet. A crosscut has been driven at 100 feet, passing through the reef, 5 feet wide, at 35 feet, and a drive put in on the course of the lode 25 feet east and 12 feet west. The reef is clear and well-defined and carries gold. No. 3 shaft has been sunk 100 feet, at which depth the reef is similar to that in the main shaft; at a depth of 70 feet it was 4 feet wide within walls, and average assays gave 14 ounces of gold per ton. No. 4 shaft is down 80 feet, at which depth the reef is 5 feet wide, carrying gold. Winding plant and saw mill running satisfactorily.

HAURAKI GOLD.—The manager reports, under date April 15:—I beg to hand you the following report for the four weeks ending the 4th inst., and up to date:—The main shaft is now sunk to a depth of 240 feet. Hitches for bearers have been cut, bearers fixed, and the derrick to carry the plunger lift to surface now being built, preparatory to landing the pit work.—220 feet level north of No. 2 reef. We have opened on this reef north-westerly a distance of 65 feet. The reef has averaged about 8 inches, but throughout the whole of this driftage no gold has been met with. I may mention at this point comparatively to the upper levels we are still somewhat south of the shoot of gold.—Iona crosscut, 160 feet level. This crosscut is now extended 335 feet. The forebreast here is now in a very hard dyke. This I look upon as very important, as I cabled you, from the fact that generally the rock the other side is changed, and inasmuch as the rock, although favourable for gold generally throughout this Iona crosscut, it has been too much broken up; hence the result of the rock the other side of dyke will probably disclose a more compact and settled sandstone.—No. 1 winze below No. 2 160 north. Here we have sunk 11 feet, present depth 56 feet. The reef has averaged 12 inches wide, and produced good general crushing gold ore. The best of the lodes sunk through in this winze has dipped north in a reef averaging 10 inches wide, carrying specimens and good general gold ore.—No. 2 winze, No. 2 reef north.—17 feet has been sunk here during the month. The total depth is now 34 feet. The reef here has averaged 12 inches wide, yielding good gold ore. The new shoot of gold referred to in my previous reports has apparently dipped through the winze here as in the No. 1. Although it is not showing very rich in the north end yet, we hope it will improve on being stopped.—Stopping on No. 2 reef north above 160 feet level. The reef here averages about 8 inches wide. This stop produced occasional picked specimens and good crushing gold ore.—Cross reef below 160. An intermediate level has been driven, the vein being about 2 inches wide. This has yielded a few pounds of specimens and good crushing ore.—New Year's reef. The stopes above the 160 feet and intermediate north have yielded during the month the first class crushing ore. The reef throughout averaged about 8 inches wide. This reef has also produced during the month (i.e., the stopes) several pounds of good picked stone.—The stopes on No. 3 reef. The stopes above the 100 feet level has produced good payable ore throughout the month. The reef here has been small, average size about 4 inches. All other general surface works are proceeding regularly, and in good order. We treated for the month 380 tons of general ore, and 793 lbs. of picked stone, which produced 2119 ounces 16 dwts. of melted bullion, which realised £6486 4s. 11d. We shall now be some time occupied fixing the plunger lift to surface without stopping our present pumping gear. In the meantime sinking the shaft below the 240 is suspended. With this plunger fixed, we shall resume sinking for the 300 feet level. We are daily expecting to communicate our 220 north-west to No. 1 winze below the 160. We shall then have passed the winze to overtake the dip of the shoot of gold, and, speaking from the appearance at both points, I have every reason to believe we shall again meet the good reef going down.

KAPANGA.—The manager reports under date April 4: I beg to hand you the following report for four weeks ending 4th inst.:—Larnach's shaft has been sunk 9 feet by 16 men, making a total depth of 906 feet. We are putting in large timber, owing to the very heavy ground, the country rock being highly mineralised. At the 900 feet a leader was intersected, running about north and south, dipping west at an angle of 45°, composed of graphite and quartz, containing a large quantity of pyrites. The country rock generally is everything that can be desired. The shaft is timbered and divided from the 800 feet to the 900 feet, and fair progress has been made with regard to cutting chamber, which we hope to have finished within a fortnight, when sinking will be resumed. At the same time, the 900 feet crosscut will be driven east, in order to intersect the reefs out in the 800 crosscut, which we hope will prove very productive as gold-bearing reefs. Judging from the appearance of the country in the bottom of the mine, combined with other indications, the prospects for the future are bright and promising.—Rising in back of 800 crosscut on what is believed to be the Kapanga reef. During the month the rise has been put up 12 feet by four men. The reef has changed its underlie; in fact, it is horizontal, and is 5 feet wide, carrying quartz, mixed with country rock, containing a little pyrites. At present the reef is very much disordered and split up. It may, however, change at any moment, and yield ore in payable quantity.—Rising above 500 on Kapanga reef. The rise has been put up 16 feet by four men, making a total of 64 feet; the reef is 3 feet 6 inches wide, composed of quartz and pug highly mineralised. North of the last mentioned rise the drive has been extended 13 feet by two men; the rock is very hard, also highly mineralised. The reef is 2 feet 6 inches wide, composed of quartz and calcsite, carrying a little gold. It appears to be improving as we advance, and carries a well defined hanging wall, and in all probability this block will turn out ore in payable quantities.—Stopping back of little intermediate on Kapanga reef. Stopes measured 33 feet by 12 feet; the reef is 20 inches wide, composed of pug mixed with quartz boulders. At present the reef looks well, but the ore is of a low grade.—Stopping south of Benney's rise above 400 on Kapanga reef by two men. Stopes measured 14 feet by 15 feet; the reef is 15 inches wide, looks well for gold at any moment. Seeing we are getting under No. 1 shoot of gold, the prospects are fairly good.—Driving from the intermediate proper on Scotty's hanging wall. The drive has been extended 12 feet by two men; we have cut through a portion of the reef, which is a fine body of quartz, and to all appearance good enough for gold at any moment.—Surface workings, driving south of Cotter's winze. The drive has been extended 20 feet by two men. During the drive the reef has carried a little gold, and although small it is very encouraging, as it contains metallic arsenic, and we shall be very much disappointed if the reef does not turn out rich specimens, as is generally the case when native arsenic is found. The junction is not yet intersected, but we hope to strike it by sinking a further 25 feet.—Corby section. Rising in the back of the bottom level by two men. The rise measured 10 feet, and the reef is 10 inches wide, with a very masterly look, composed of solid quartz of a very promising character, being favourable for gold. Driving on No. 1 reef by two men. The drive measured 24 feet. The reef is 7 inches wide, composed of quartz and pug. It has considerably improved in appearance during the drive. We have not resumed sinking the shaft, owing to the influx of water. However, sinking will be commenced as soon as the new safety cage is sent down. We have erected the new poppet heads 65 feet in height. All this has greatly interfered with our underground workings, seeing we had to keep the men up in order to carry out the above-mentioned work. All machinery and pitwork working well.

SOUTH KALGURLI.—Main shaft, No. 1 lode, is down 100 feet at which point a crosscut has been put in 23 feet 6 inches to cut the lode passed through at 65 feet, a bulk sample from which gave an assay of 1 ounce 6 dwts.—No. 1 shaft, No. 1 lode. Shaft down 50 feet; No. 1 crosscut driven 43 feet; No. 3 crosscut driven 52 feet; a bulk sample from this crosscut gave 3 ounces 15 dwts. 18 grains; a winze has been sunk 15 feet in this crosscut with a view to crosscutting for the lode at 30 feet. No. 7 shaft, No. 1 lode is down 45 feet, assays 8 dwts. 11 grains. No. 6 shaft, No. 2 lode, is down 50 feet, and a drive has been put in 23 feet south, and 50 feet south-west, assays gave south drive 1 ounce 3 dwts. 17 grains, and south-west drive 14 dwts. 2 grains. Assays made by Messrs. Johnson, Matthey, and Co., from three bulk samples taken from No. 1 lode, received from the mine, gave an average assay value of 1 ounce 17 dwts. 20 grains.

WEST KALGURLI.—The following is from the mine manager's report: Lease No. 1991. Old No. 518. We have sunk main shaft a further distance of 6 feet 6 inches. Total distance from brace 62 feet 6 inches.—Lease No. 2213. Old No. 438. Have sunk shaft a further distance of 10 feet 3 inches, total depth from brace 41 feet 9 inches. The country is much improved in gold bearing character, although a little harder for working. Went through a nice 4 inch quartz leader underlying easy and carrying a little gold (fine). Have also obtained one colour of visible gold in reef south of shaft on the surface.

ALAMILLOS.—Mine report, dated May 20, 1896: In the 70 fathoms level east of Sanz Winze the lode is open, and good progress is being made in driving. The lode in the 40 east of Santa Agueda shaft is again producing lead, and is valued at 1 ton per fathom. In the 85 west of Taylor's engine shaft the lode continues small and poor. The 160 west of the same shaft remains unproductive, but the lode has a more favourable appearance. In the 100 east of Judd's engine shaft a valuable lode is still being opened up, estimated at 4 tons per fathom. Herman's winze sinking below the 60 fathoms level. The lode has fallen off in value to 1/2 ton per fathom. Marques' winze below the 100. The lode is unproductive. Diaz rise in back of the 100 fathoms level. The lode has further decreased in value, and is now estimated at 1 ton per fathom.

EMERALD (REWARD).—Yalgoo, April 17; Report No. 17: I beg to forward my usual weekly report upon the different exploration points throughout the mine. Point No. 1, main shaft: I have just secured sufficient timber to commence securing this shaft, and shall complete it for 30 feet as soon as possible. The timber I am getting is being obtained 16 miles from the mine, and delivered in pieces for wall plates, 8 feet 6 inches at 5s., and end pieces 6 feet long at 3s. 6d. each. I think as soon as the railway has been completed to Yalgoo, that I shall arrange with Messrs. Baxter & Prince (the contractors) to cut and deliver me all timber required for the mine. I think by carrying out this policy it will be as cheap, if not cheaper, than getting the rough timber from the Forest.—Shaft No. 1 (well shaft): The lode in the back of the stope referred to in my last report, has been communicated to old workings. I have three men now working on the back on the same level, but on a distinct branch, where the lode is 9 inches wide, and is producing quartz that I think will average, say, from 15 to 18 dwts. per ton.—Point No. 3, Shaft No. 1 con.: The men (4) employed here are driving south and north-east, and raising in the back where the vein has formed a junction with the main lode. The lode in the two former ends is about 1 foot to 14 inches wide, with other contra veins, composed chiefly of quartz, which produce occasionally stones showing free gold, but which is on the whole of very low value. The lode in the back of the level is from 6 to 10 inches wide, and at places yields some very fine specimens of gold-bearing rock. I am now milling about 12 tons, the result, if possible, I shall insert in my accompanying letter for this week, if not then in my next week's report.—Shamrock, Shaft No. 2: I have three men engaged at the bottom of this level, driving east and west at 25s. per foot. The lode in the east end is 14 inches wide, and that in the west end is only 8 inches wide.—(Signed) JAMES PENBERTHY, Manager.

GOLDEN FEATHER (LIMITED).—The second ordinary general meeting of the shareholders in the Golden Feather (Limited), took place on Thursday, at Winchester House, E.C., when Mr. J. T. P. Pechey, who presided, in moving the adoption of the report and balance-sheet, said only poor returns had been made during the past year in consequence of the company having worked that portion of the river bed which was worked some thirty years ago by the miners of the Cape Union. Consequently the ground was very poor, but happily they now knew that during the coming season the gravel they would work was up to the present time untouched, and he personally had no fear whatever with regard to the results. He believed they would have had better returns last year had the elevator been placed on bed rock instead of on a very large boulder, a mistake which nobody could be held responsible for. Financially, last year's work resulted in a loss of £2,283. They were commencing the present season under entirely new management, having appointed Mr. G. H. Evans as Superintendent. In a letter, dated May 1, Mr. Evans reported very favourably on the outlook, and on May 27 he cabled: There is a favourable change in the weather; great heat now set in. The river is now rising; hope to be able to turn the river about the same as last year. We are doing all possible to expedite matters. The dry season is now upon us. Prospects of the season good. There is reason to believe returns will be satisfactory." In conclusion, Mr. Pechey said they had 6,000 feet to 7,000 feet of perfectly untrenched ground to work over, and Mr. Evans had informed them that one patch of rich gravel left by the old miners had yielded 4,800 dols., therefore from that they might judge for themselves as to the rich nature of the ground.—Mr. Borwick seconded the resolution, and it was carried.

GOLDEN DOVE.—The following is the report of work done on the Golden Dove Mine during the month of April 1896: "Golden Dove shafts Nos. 1, 2, and 3. Stopping operations from these shafts is being carried on, and the stopes yielding their usual quantities of ore. Scott's shaft No. 1 has been sunk a further 20 feet—total, 100 feet. The reef in this shaft is widening, and the quality of ore better. Scott's shaft No. 2: This shaft has been sunk a further 8 feet—total, 95 feet. Here also the reef has improved considerably. The stopes between shafts Nos. 1 and 2 is giving the same results as previously reported. We have this month started a drive westward along the reef from shaft No. 2 at 70 feet level. This drive is now in 10 feet—total, 10 feet. Low level adit has been advanced a further 6 feet—total 414 feet. We have now cut through Scott's, and by doing so have proved the existence of a lode a trifle over 11 feet wide. The lode is well defined. As Mr. A. E. Edwards is taking back samples of this lode for assay, comment upon its value is unnecessary. We have now commenced to cross-cut the lode. Drive East has been driven 3 feet—total, 3 feet. Drive West, 3 feet—total, 3 feet. Battery.—The erection of battery is practically completed. The tables have arrived, and the work of putting them now expecting daily the material for battery house to arrive. I am now negotiating for the purchase of a span of 18 oxen for the transport of ore from mine to battery. In conclusion, I should like to remark that the directors are to be congratulated upon their decision in sending Mr. A. E. Edwards out, as I consider his presence here—although only a few days—did much to hasten matters forward." Mr. A. E. Edwards has returned from his visit to the mine, and the directors are pleased to say that he amply confirms in every respect his report, of which an extract has already been published.

HERBERT GOLD MINES.—The Special Commissioner of the Mining Journal & Investors Review, Coolgardie, has the following on this property in the issue of April 18: "I was much impressed with the Herbert. The reefs are most solid and the stone is exceedingly rich in gold. I believe it is every bit as good as the stone from the Lady Loch, and, if anything, there is a larger body in sight. I should say the stone at grass will average more than 2 ounces right through, and the specimens I knocked off the reefs at the lowest levels convinced me that there is a huge body of good stone ready for treatment. Mr. Churchward (the local representative) informs me he intends to have a crushing of 100 tons as soon as he can complete arrangements. I was pleased at having visited the Herbert, as it means the addition of one more to my list of good Coolgardie mines."

MCKENZIE.—Fortnightly report from the mine manager: Main engine shaft, 130 feet level. South drive on lode advanced 7 feet from shaft; lode varying from 8 inches to 18 inches wide; estimated yield, 1 1/2 ounces gold per ton.—No. 1 shaft. No. 1 stope north advanced 5 feet; total distance from shaft, 73 feet. No. 2 stope north advanced 5 feet; total distance from shaft, 33 feet. No. 3 stope north advanced 25 ft.; total distance from shaft, 40 ft. Lode in the above stopes from 6 inches to 13 inches wide; estimated yield, 1 1/2 ounces gold per ton.—No. 2 stope south advanced 22 feet; total distance from shaft, 62 feet (which is the boundary). No. 3 stope south advanced 34 feet; total distance from shaft, 40 feet. No. 4 stope south advanced 13 feet from shaft. Lode in the above stopes from 6 inches to 20 inches wide; estimated yield, 2 1/2 ounces gold per ton.—No. 2 shaft sunk 7 feet; total depth from surface, 30 feet. Anticipated cutting the lode in this shaft at 58 feet from surface.

WEST RANDT DEVELOPMENT.—Under date of May 2, the Manager reports: "Development work is progressing actively and favourably. In No. 1 shaft the reef is opening out, and is now 2 feet 3 inches in width, and the formation is becoming stronger. I hope to forward you results of assays at 35 feet level by next mail. In No. 3 shaft I am sinking and driving on the conglomerate reef, and intend to do so until I reach the westerly drive in the 35 feet level. In No. 1 shaft the reef continues as firm as when we started, and is now about 7 feet in width. In No. 4 shaft I have now reached a depth of 28 feet, and have cut a sandstone reef showing good gold. This is probably the westerly formation of the conglomerate reef in No. 3 shaft. I shall now open up in a northerly direction, for the purpose of cutting the lower formations."

COLUMBIA (CHARTERS TOWERS).—The mine managers report as follows for the fortnight ending 8th April: Vertical Shaft.—The Contractors have sunk the shaft an additional 27 feet, making the total depth 187 feet from the surface, and they are now engaged in timbering. The ground is very favourable for sinking, and there is no material increase in the water. Plans for the general arrangement of buildings, poppet legs, &c., have been prepared, and the necessary excavations will be proceeded with at an early date. The boiler is now on the ground, and the other machinery is daily expected from Townsville.

CHAFFERS.—In fortnightly report the manager states that he is now prospecting north along eastern boundary to connect if possible with the western cross-cut of the Boulder Main Reef Company, with a view to picking up their lode, which is showing a westerly dip.

ECLIPSE.—The manager reports under date April 22: "We have cut through a strong lode several feet in thickness in the eastern crosscut from the main shaft. All our pannings yielded fine gold." These remarks refer to a new formation at the No. 1 main shaft, and not to the north-west shaft, respecting which a notice was recently issued.

ASSOCIATED GOLD MINES.—Mine manager's fortnightly report, April 8: Adelaide (Block 103e). Crosscuts east and west continued. West extended to total 45 feet. Ground passed through consists of mineralised schist, East extended to total 46 feet 6 inches. The last 10 feet passed through consists of very good lode material, consisting of slaty schist heavily charged with decomposed iron gossan. Its present appearance justifies driving on its course after having proved its width.—Australia East (Block 72e). Shaft No. 6 sunk to total 54 feet. Shaft No. 2 crosscut extended to total 35 feet. Shaft No. 6 View Extended (Block 101e). Shaft No. 3 crosscut east extended to total 13 feet 6 inches; west extended to total 22 feet 6 inches. Ground here is harder, but more stratified and well mineralised; there are also good quartz leaders. Shaft No. 4 crosscut west and east extended to total 41 feet 6 inches. In east crosscut a drive south on course of lode has been started 15 feet from shaft and driven 7 feet 6 inches. There is gold in the stone. Shaft No. 5 drives east and west on crosscourse reef continued. West drive extended to total 63 feet 6 inches. In this drive the reef continues, and will intersect the shaft No. 4. East drive extended to total 78 feet. Country traversed consists of schist with ironstone bars with quartz intervening.—Australia (Block 135e). Drive north at 80 feet level extended to total 47 feet 6 inches. Lode continues strong, and consists of quartz and ironstone, and at present carries gold averaging 1 ounce to the ton.—(Signed) William Oats.

ASSOCIATED GOLD (W.A.).—A combined west and east crushing and cyaniding plant equal to a capacity of a 20 stamp mill is now in course of shipment, a considerable part on having gone by the s.s. *Culgoa*, and the remainder leaving by the s.s. *Port Stephens* about June 6. This machinery is said to combine all the modern improvements having been specially designed by the company's engineer, Mr. George Gray.

ARROW PROPRIETARY.—Mine manager's fortnightly report April 21: Gault section. Foucher's shaft sunk 14 feet below the 100 feet level, at which level we intersected water, about 400 gallons per 24 hours. This shaft is being secured with square timber, and every effort made to advance the shaft. The 100 feet drive north is communicated with Brookman's shaft. This drive has proved continuity of lode, together with its make up and yield for distance of 233 feet.—Brookman's shaft. Have cut plot at 100 feet level, secured months of drives, and extended crosscuts east towards Barrow's shaft 45 feet. A small piece of quartz was intersected in present and which panned very good gold. Barrow's shaft sunk to total 102 feet. Shaft No. 2 prospecting shaft sunk to total 20 feet. The lode is 2 feet wide, and gold is visible in stone. No. 1 shaft driven south on the leader 12 feet. Quality of stone is same as that in drive in the opposite direction.—(Signed) Wm. Oats.

HANNAN'S OROYA GOLD.—Mine manager's fortnightly report April 8: Oroya main shaft 107 feet level driven south on lode to total 20 feet, and north to total 14 feet. The ore obtainable is of splendid quality, yielding 3 ounces per ton. Western crosscut extended to total 33 1/2 feet. This shaft is timbered and divided 70 feet, and will be completed within next fortnight.—Royal Mine west. No. 1 prospecting shaft sunk to total 24 feet. The country adjacent to lode is rather hard, but the reef carries gold. No. 2 prospecting shaft sunk to total 20 feet. The lode is 2 feet wide, and gold is visible in stone. No. 1 shaft driven south on the leader 12 feet. Quality of stone is same as that in drive in the opposite direction.—(Signed) Wm. Oats.

LAKE VIEW SOUTH GOLD.—Mine manager's fortnightly report April 8: Lake View south (Block 71e). The crosscut east at 100 feet level driven to total 52 feet 6 inches. Ground consists of sandstone with quartz leaders running through it. Stripping the sides of the level is being carried on, good gold showing all the way.—Surface work. The condenser is nearly complete; nothing more can be done as regards battery until the remainder of fittings arrive.—(Signed) Wm. Oats.

NEW QUEEN.—The following fortnightly report has been received from the mine, dated Charters Towers, April 10: No. 4 south level footwall. Stopping has been carried on both over and under this level, the reef varying from 3 to 6 inches.—No. 3 formation. The level from the straight shaft has been extended a further distance of 5 feet, making it 131 feet from shaft. There is no reef in the face of level. Stopping has been carried on over the level, but there is no defined reef; occasional patches are met, varying in size from a leader to 6 inches. Stopping has also been carried on both sides of the winze, the northern side containing very little reef. On the south side the reef varies from 3 to 8 inches, and the stone from this stopes appears to be of better quality carrying more mineral.—No. 4 formation. No. 3 north level. Stopping has been continued over this level, the reef varying from 3 to 3 inches.—No. 5 formation. The eastern level is driven 35 feet from the straight shaft. The formation is about 7 feet in width, carrying veins of quartz, some of these veins varying from 1 to 6 inches, and are rather white. The western level is driven 25 feet from the straight shaft. The formation in this level is very wide, and a portion is being left on the hanging wall. The ground is fairly good. The reef on the footwall is fully 15 inches wide, and appears to be improving in quality. Quantity of quartz raised for the fortnight.—No. 4 south level footwall, 99 inches; No. 2 formation, 115 inches; No. 4 formation, 42 inches; No. 5 formation, 51 inches; total, 347 inches.

GIBRALTAR CONSOLIDATED.—Extract from Mr. Eiseler's report, dated April 17: Radloff shaft. The north drive 150 feet level going north shows now a white quartz vein with a leader 1 1/2 inch wide in the centre, assaying 5 dwts. 11 dwts. 6 grains fine gold. About 150 north of shaft in the same level we are sinking a winze now down 25 feet, and a good reef over 20 inches wide is followed, the ore being certainly worth 3 ounces to the ton. On the 150 feet level south drive the reef continues. The ore raised from this level is worth 4 dwts. to the ton. In the bottom of the shaft new down 35 feet the reef is 18 inches wide, and it looks as if the wide channel is contracting and that the two seams of ore will join within a few feet of sinking. The reef which we west on south should intersect the Calico reef, and the same is being sunk upon now on rich ore right against our boundary, but the crosscut has to go in some 300 feet before the reef can be struck. I am glad to be able to report good progress in Perkins shaft and a decided improvement. You will be pleased to hear that the bottom of the shaft (now down 155 feet) for its full width of 54 feet seems to be little or no diminution in our ore reserves here.—Drives for the month 551 feet 6 inches. Ore mined 1000 tons made up as follows:—August 25 days, crushing 1000 tons, yielding of smelted gold 528 ounces 5 dwts. 12 grains. This little plant again contributed very satisfactorily to our output of gold, treating 25 tons 5 dwts. 2 qrs. of concentrates for 120 ounces of smelted gold. This, I need not tell you, leaves a substantial balance in credit.—Cyanide gold. Mr. Wilson, the new chemist, is still at work in the laboratory making the necessary tests, and should soon be ready to start the plant and treat the tailings. As in bulk.—General. We have a good deal of work in hand which may fairly be taken under this head, and I am pleased to say good progress is being made in carrying it out. Buddies (two) for the closer crushing of our 6 bank sands have been made, and are now working satisfactorily, and others are being made to assist in this. The race from the mill to the main dam is almost completed and the retaining banks of both the main and Kall dams are being raised.

RICHMOND CONSOLIDATED.—The manager under date of April 23 reports as follows:—The ladderway in the underlie has now been put down to the 123 feet level, where communication is made with the vertical shaft. The north drive north has been extended 4 feet on the course of the reef. The reef is as solid about here as it promises to be further in, the ground getting more and more solid every foot. It now appears that where the shaft is sunk the reef comes, the reefs are very much broken up throwing the reefs out of the vein. The quartz causing bands of mullock and foreign matter to run in the vein. The reef carries fine gold, the schist on the hanging wall side in some cases being rich with the precious metal. The ventilation I am pleased to say, now that the connection has been made with the underlie, is all that can be desired, the driving for a considerable distance can be carried on, and a sufficient supply of ventilation maintained.

TIGER (Masi Kase).—Report of the superintendent engineer, Mr. Nixon, for the month of March: Drive No. 1 advanced during the month 25 feet, total length 435 feet. There is no change in the ground here, but we are still cutting more water. I have had a blacksmith and carpenter's shop built. Total number of workpeople employed, two whites, 17 natives.

previous to March 1, 81 feet; total depth April 1, 115 feet. East Shaft during March, 81 feet; previous to March 1, 114 feet; total depth April 1, 135 feet.

CORREGUM.—Superintendent's report for fortnight ending May 5, Taylor's shaft sunk 1 foot 6 inches depth below the 380 feet level 14 feet 8 inches. Lode 3 inches wide assay value 4 dwts, 8 grains. The shaft not being deep enough a plat, to have to sink and excavate for plat at same time. Good progress is being made with the 460 feet level south driven 5 feet 3 inches, total 33 feet. Lode 3 inches wide assay value 10 dwts, 21 grains. No. 1 winze 480 feet level south driven 24 feet, total 282 feet 6 inches. Lode 1 foot 3 inches wide assay value 1 ounce 3 dwts, 22 grains.—No. 1 winze 880 feet level south sunk 2 feet 6 inches total 30 feet. Lode 1 foot 3 inches wide assay value 1 ounce 6 dwts, 2 grains.—No. 2 Winze 861 feet level south commenced, sunk 7 feet. Lode 1 foot 3 inches wide assay value 5 ounces 14 dwts, 8 grains. The 860 feet level north driven 12 feet 3 inches, total 137 feet. Lode 3 inches wide assay value 1 ounce 14 dwts, 19 grains. Lode 3 inches wide assay value 1 ounce 14 dwts, total 12 feet. Lode 1 foot wide, assay 3 dwts, 19 grains. No. 1 winze 760 feet level south sunk 3 feet 6 inches, total 58 feet 6 inches. Lode 1 foot 3 inches wide, assay value 2 ounces 14 dwts, 10 grains. No. 4 winze 660 feet level south sunk 8 feet, total 38 feet. Lode 1 foot wide, assay value 10 dwts, 21 grains. Level north from back of No. 4 rise 280 feet level south driven 10 feet, total 185 feet 6 inches. Lode 1 foot 6 inches wide, assay value 3 ounces 9 ounces 6 dwts. Walroth's shaft sunk 11 feet, total 126 feet 9 inches. The lode is still very small, communicated with the 1060 feet level. The 1062 feet level south driven 15 feet 6 inches, total 327 feet. No. 1 winze 1062 feet level sunk 3 feet 9 inches, total 50 feet 3 inches. The lode in each of these points continues very small. The 1060 feet level north driven 8 feet 3 inches, total 247 feet 9 inches. No. 1 winze in this level sunk 4 feet 9 inches, total 55 feet 9 inches. No change in character of strata or size of lode still small and of no value. The 968 feet level south driven 12 feet 3 inches, total 81 feet. The lode being very contracted, merely a streak, it was thought advisable to sink the 968 feet level. The result of driving the 968 feet level north from Taylor's shaft. No. 1 winze 860 feet level south sunk 2 feet 6 inches, total 83 feet 6 inches. Lode small and of no value. Communicated with 1060 feet level south. The 980 feet level north driven 13 feet 9 inches, total 201 feet. Lode 3 inches wide, assay value 15 dwts, 6 grains. The 760 feet level north driven 10 feet, total 485 feet 6 inches. Lode 3 inches wide, assay value 4 dwts, 8 grains. No. 3 winze 760 feet level north driven 12 feet 3 inches, total 5 feet 9 inches. Lode 10 inches wide, assay value 4 ounces 7 dwts, 2 grains. Level north from croc east 460 feet level south driven 11 feet 6 inches, total 179 feet 6 inches. Lode 4 inches wide, assay value 8 dwts, 17 grains. The 460 feet level north driven 12 feet 3 inches, total 560 feet. Lode 6 inches wide, assay value 7 dwts, 15 grains. No. 2 winze 460 feet level north sunk 6 feet 6 inches, total 36 feet. Lode 2 feet 6 inches wide, assay value 3 ounces 5 dwts, 6 grains. The 215 feet level south driven 13 feet 9 inches, total 350 feet 6 inches. Lode 3 inches wide, assay value 13 dwts, 2 grains. No. 2 winze 350 feet level south commenced, sunk 9 feet. Lode 4 inches wide, assay value 14 dwts, 12 grains. Level south from croc east 215 feet level north driven 15 feet 9 inches, total 28 feet. Lode 3 feet 6 inches wide, assay value 5 dwts, 10 grains. Low's shaft sunk 7 feet, total depth 837 feet 4 inches. The 810 feet level south from point of intersection driven 25 feet, total 142 feet. Lode 8 inches wide, assay value 5 dwts, 10 grains. The 810 feet level north from point of intersection driven 1 foot 3 inches, total 69 feet 6 inches; still in dyke. The No. 1 winze 810 feet level north from point of intersection commenced, sunk 6 feet 8 inches. Lode 4 inches wide, assay value 8 dwts, 17 grains. The 710 feet level south driven 14 feet, total 342 feet. Lode 4 feet 6 inches carried, assay value 6 dwts, 12 grains. No. 2 winze 710 feet level south sunk 7 feet 6 inches, total 47 feet. Lode 2 feet wide, assay value 4 dwts, 8 grains. No. 1 winze 710 feet level south driven north on lode from point of intersection sunk 8 feet 3 inches, total 71 feet 9 inches. Lode 6 inches wide, assay value 3 dwts, 6 grains. The 610 feet level south driven 15 feet 9 inches, total 137 feet. Lode small; no sample. The 510 feet level south driven 5 feet 6 inches, total 413 feet 6 inches. Lode 4 inches wide, assay value 1 ounce 3 dwts, 22 grains. No. 1 winze 510 feet level south sunk 5 feet, total 23 feet 9 inches. Lode 1 foot wide, assay value 1 ounce 1 dwts, 19 grains.—Probyn's shaft. The 1150 feet level north driven 10 feet 6 inches, total 97 feet. Lode 3 inches wide, assay value 4 dwts, 8 grains. The 1050 feet level south driven 8 feet, total 188 feet. Strata disordered. Lode small and of no value. The No. 1 winze 1050 feet level south sunk 1 foot, total 68 feet 6 inches. Lode 2 feet 3 inches wide, assay value 6 dwts, 12 grains.—Strata for the month of April. Taylor's shaft. Back of 760 feet level south stop 33 fathoms. Lode 3 feet 1 inch wide, assay value 1 ounce 14 dwts, 19 grains. Bottom of 860 feet level south driven 19 fathoms. Lode 5 feet wide, assay value 3 ounces 9 dwts, 17 grains. Bottom of 580 feet level stop 53½ fathoms. Lode 2 feet 6 inches wide, assay value 1 ounce. Bottom of 480 feet level south stop 72 fathoms. Lode 2 feet 10 inches wide, assay value 15 dwts, 17 grains. Bottom of level south from back of No. 4 rise 280 feet level south stop 4¾ fathoms. Lode 1 foot 3 inches wide, assay value 1 ounce 14 dwts, 8 grains. Bottom of level south from back of No. 4 rise 280 feet level south stop 4 fathoms. Lode 2 feet 6 inches wide, assay value 15 dwts, 17 grains. Back of level north from back of No. 4 rise 280 feet level south stop 13½ fathoms. Lode 1 foot wide, assay value 10 dwts, 21 grains.—Walroth's shaft. Bottom of 880 feet level south stop 4¾ fathoms. Lode 2 feet 3 inches wide, assay value 9 dwts, 6 grains. Bottom of 760 feet level south stop 18¾ fathoms. Lode 3 feet wide, assay value 19 dwts, 1 grain. Back of 750 feet level south stop 22½ fathoms. Lode 3 feet wide, assay value 2 ounces 2 dwts, 11 grains. Bottom of 680 feet level south stop 13½ fathoms. Lode 1 foot 8 inches wide, assay value 1 ounce 3 dwts, 5 grains. Bottom of 650 feet level south stop 17½ fathoms. Lode 1 foot 8 inches wide, assay value 2 ounces 5 dwts, 17 grains. Bottom of 680 feet level north stop 8¾ fathoms. Lode 1 foot 9 inches wide, assay value 3 ounces 2 dwts, 23 grains. Bottom of 580 feet level south stop 20¾ fathoms. Lode 3 feet 10 inches wide, assay value 1 ounce 9 dwts, 19 grains. Back of 580 feet level south stop 4¾ fathoms. Lode 1 foot 10 inches wide, assay value 1 ounce 10 dwts, 18 grains. Bottom of 560 feet level north stop 10 fathoms. Lode 1 foot 10 inches wide, assay value 1 ounce 17 dwts. Bottom of 480 feet level south stop 14 fathoms. Lode 1 foot 10 inches wide, assay value 1 ounce 1 dwts, 11 grains. Back of 460 feet level south stop 10½ fathoms. Lode 6 feet wide, assay value 3 ounces 9 dwts, 16 grains. Bottom of 460 feet level north stop 3¼ fathoms. Lode 1 foot 6 inches wide, assay value 3 ounces 18 dwts, 9 grains. Back of level south from croc east 460 feet level south stop 4¾ fathoms. Lode 1 foot 3 inches wide, assay value 13 dwts, 12 grains. Bottom of 460 feet level south stop 3 fathoms. Lode 2 feet wide, assay value 3 dwts, 6 grains. Back of 360 feet level south stop 3¼ fathoms. Lode 2 feet wide, assay value 3 ounces 16 dwts, 8 grains. Bottom of 360 feet level north stop 6 fathoms. Lode 1 foot 9 inches wide, assay value 2 ounces 10 dwts, 1 grain. Bottom of 280 feet level south stop 4¾ fathoms. Lode 2 feet 9 inches wide, assay value 1 ounce 8 dwts, 7 grains. Back of 215 feet level south stop 14 fathoms. Lode 6 inches wide, assay value 15 dwts, 17 grains. Bottom of 215 feet level north stop 4 fathoms. Lode 1 foot 11 inches wide, assay value 15 dwts, 5 grains. Back of 215 feet level north stop 1½ fathoms. Lode 1 foot wide, assay value 2 ounces 12 dwts, 6 grains.—Low's shaft. Bottom of 710 feet level stop 9¾ fathoms. Lode 3 feet 2 inches wide, assay value 7 dwts, 1 grain. Bottom of 610 feet level south stop 10 fathoms. Lode 2 feet 4 inches wide, assay value 2 ounces 7 dwts, 22 grains. Bottom of 510 feet level south stop 5 fathoms. Lode 2 feet wide, assay value 15 dwts, 5 grains. Bottom of 480 feet level north back of 260 feet level south stop 5½ fathoms. Lode 2 feet 10 inches wide, assay value 1 ounce 14 dwts, 11 grains.—Probyn's shaft. Bottom of 85 feet level south stop 5½ fathoms. Lode 1 foot 4 inches wide, assay value 4 dwts, 8 grains. Back of 550 feet level south stop 11½ fathoms. Lode 1 foot 4 inches wide, assay value 1 ounce 5 dwts, 13 grains.—Exploratory work, Walroth's shaft. The crosscut west, 1060 feet level south, driven 29 feet 3 inches, total 165 feet 9 inches. No discovery. The crosscut west, 1060 feet level north, driven 15 feet, total 47 feet 3 inches. No discovery. The crosscut east, 760 feet level north, driven 4 feet 6 inches, total 8 feet 2 inches. No discovery. Mayday's shaft. Exploratory shaft, 280 level south, driven 5 feet 3 inches, total 138 feet from croc east west. Lode 1 foot wide, assay value 6 dwts, 12 grains.—Probyn's shaft. The crosscut east from 950 feet level south driven 33 feet, total 75 feet. No discovery. During the month of April we crushed 4924 tons of quartz which produced 5197 ounces of gold. In addition to this 4999 tons of tailings were treated, which yielded 92 ounces of gold, total return 6110 ounces of gold.

MENZIE'S GOLD REEFS PROPRIETARY.—The following information is to hand from the manager at the mines, under date Menzie, April 18: Royal grove. Eva shaft. Total depth from surface 149 feet. Water is making in the shaft at the rate of 2000 gallons per day. This being too much to properly manage with the whip, sinking has been discontinued until the hauling plant is erected. We are now engaged on the erection of the necessary gear.—May shaft. A second condensing plant has been erected here, which will enable us to utilize a larger quantity of water. We have consequently resumed sinking this shaft. Total depth from surface 137 feet. The shaft is in the stage of sinking quartz as deep as when first met with, and maintains a level of 11 inches, 1 inch, and worth 6 ounces of gold per ton. The water in this shaft is making at the rate of 1000 gallons per day.—Ada shaft. Depth from surface 60 feet. We have passed through a lode formation 12 feet wide, consisting of quartz leathers, ironstone veins, and soft slaty rock. Several samples taken from here gave a result equal to 5 dwts. gold per ton.—St. Albans. Main shaft. Total depth from surface 155 feet. The North shaft, 90 feet from surface 95 feet. Crosscut runs in the lode and is of a much milder nature. We propose opening it when the shaft reaches 100 feet and driving to connect with the main shaft.—Piant. Both of the hauling plants are now on the ground, and the work of erecting them will be at once proceeded with. One of these plants will be erected at the Eva shaft and one at the May shaft. A further plant will be purchased for erection at the St. Albans.—Water rights. The water right to the lake, 5¼ miles distant from the property, has been granted to the company. The recent rains have put at least 20,000,000 gallons of water into the lake. The water at present is quite fresh.

MENZIE'S GOLD REEFS PROPRIETARY.—The following information is to hand from the manager at the mines, under date Menzie, April 18: Friday Lease: A shaft, No. 2 level. Have started stoping from back of north and south levels. Reef averages 1 foot good stone. We have cut out a plat and started to sink a winze from the south level to connect with No. 3 level when that level is driven on the reef from the bottom croc east. Hauled 22 tons of stone from the reef,

The rock is 2 ft wide, and goes to the top of the shaft. **HIT OR MISS PROPRIETARY.**—Copy of letter received from consulting engineer at Coolgardie, Western Australia, April 22: On my return from the mine I yesterday cabined my report particularly advising the cutting of what appears to be a new reef in Power reef in Power shaft. This reef is 2 feet wide and is out at 50 feet north of the 100 ft. underlay. In driving the 100 feet level along the black vein it was expected that we would cut the reef opened in the north east shaft and at 100 feet further ahead, but I am of opinion that this is a new reef. The thickness of gold is showing strong under foot also overhead, and the occurrence tends to show that in the long length we have yet to drive along this vein we may meet several such occurrences. The parallel reef opened in the new shaft 100 feet north of the north east shaft is also showing very good stone, and will also intersect the black vein. At Christians we have established the connection with the engine shaft and are now driving south from the underlay, being now enabled to raise all our own stone at the one shaft. The reef in the drive is very strong, about 5 feet wide and very good average stone, being of regular ore of about 3 ounce value.

BRITISH COOLGARDIE.—Included in the assets taken over by this company from the British Coolgardie Prospecting Syndicate (in liquidation) was an eighth share in the Island Queen at Lake Austin. With reference to this property, a cablegram dated 21st April has been received from Cue to the following effect: "Island Queen have struck a very rich pocket of ore, specimens received from Bank of Australia (Limited), estimated at about £400. Will be more."

MOUNT ROWE CONSOLIDATED.—The manager, under date of April 22, reports as follows:—The drive north at the 152 feet level has been extended 6 feet, total 39 feet. The reef is now 21 inches wide, and carries very nice gold. The drive south has been extended 6 feet, total 35 feet. The reef is 2 feet wide of solid quartz, and carries fine gold throughout.

ROYAL SOVEREIGN.—Manager's report for week ending April 18: The main shaft finished timbering; start to sink this week. Winze in the north drive has been sunk 3 feet. The reef is looking well.

VAN RYN WEST.—The report on the operations for the months of January, February, and March contains the following:—North mine, No. 1 shaft incline was driven 55 feet, total depth 257 feet, east drive, first level, 76 feet, total 425 feet, west drive, first level, 131 feet, total 426 feet, east drive, main reef leader, 114 feet, total 252 feet, west drive, main reef leader, 160 feet, total 332 feet, rise to No. 2 winze 13 feet, total 19 feet, No. 2 winze below level 29 feet, total 29 feet, crosscut south 12 feet, total 17 feet, No. 2 winze 50 feet, total 97 feet, crosscut south from No. 3 winze 5 feet, total 10 feet, east drive, No. 3 winze, main reef, 36 feet, total 47 feet, west drive from No. 3 winze 38 feet, total 50 feet, rise to No. 2 winze, first level to surface 3 feet, total 22 feet.—Mine No. 2, sinking No. 2 shaft vertical 44 feet, total 203 feet, east drive, main reef, first level, 94 feet, total 387 feet, west ditto 55 feet, total 232 feet, east drive, main reef leader, first level, 166 feet, total 234 feet, west ditto 121 feet, total 202 feet, east drive, main reef, 54 feet, total 60 feet, crosscut south 18 feet, total 23 feet.—South series, sinking No. 3. Sinking No. 3 shaft incline 33 feet, total 191 feet.—Mine No. 4. Sinking No. 4 shaft vertical 72 feet, total 315 feet, east drive, second level, 177 feet, total 421 feet, west ditto 96 feet, total 436 feet, No. 7 rise east 9 feet, total 15 feet, No. 8 ditto 11 feet, total 17 feet, No. 9 ditto 11 feet, total 17 feet, No. 10 ditto 10 feet, total 16 feet, No. 11 ditto 11 feet, total 17 feet, No. 12 ditto 8 feet, total 14 feet, No. 13 ditto 11 feet, total 17 feet, No. 6 rise west 5 feet, total 16 feet, No. 7 ditto 16 feet, total 22 feet, No. 8 ditto 8 feet, total 14 feet, No. 9 ditto 14 feet, total 20 feet, No. 10 ditto 13 feet, total 19 feet, No. 11 ditto 47 feet, total 53 feet, No. 1 winze east 1 foot, total 6 feet, No. 1 winze west 2 feet, total 2 feet. In the aggregate 646 feet were driven in January, 581 feet in February, and 1334 feet in March, total 1834 feet, making a total development to March 31 of 5133 feet.—Ore in sight at March 31. No. 1 mine, main reef, 13,278, No. 1 mine, main reef leader, 7200 tons, No. 2 mine, main reef, 3143 tons, No. 2 mine, main reef leader, 6300 tons, No. 4 mine, south reef, 12,513 tons, total 42,434 tons. All rock and unpayable ore is excluded from this estimate.—The mines, south series, No. 1 incline shaft, has been sunk and timbered to a depth of 287 feet from the surface. The reef at present is being intercepted by horizontal quartzite crossings, but, as depth is gained, these will, it is believed, be less frequent, and the quality of the ore should considerably improve. No. 2 shaft vertical is down to a depth of 203 feet. In the east drive on the main reef for the distance driven the reef has been continuous. In the west drive no work has been done, as it now contains little or no reef matter, with indications of close proximity to the large dyke which cut through and divides the east and west sections of the property. In the drives on the leader the reef has been continuous in the ground driven through, and with slight variations maintains its usual quality, averaging about 18 inches in thickness, with an average yield of 20 dwts. South series, No. 3 incline shaft, has now attained a depth of 191 feet. This reef is flattening as the shaft goes down, the present angle being 40°. From pinnings taken the reef shows marked improvement, but being of a patchy character the real value can only be ascertained as the development proceeds. No. 4 vertical shaft has now attained a depth of 315 feet from the surface—i.e., 73 feet below the second level. The reef is still being worked in the shaft, and contains about 2 feet of reef matter of good average grade.—Machinery and plant. The machinery at work is giving very satisfactory results up to its capacity. The winding engine for No. 1 shaft and the boiler plant have been erected, and are nearly finished. There is a substantial well-built house for both engine and boiler. Battery plant is being proceeded with, and the house for machinery and boiler beds is being put in with despatch. Owing to unavoidable delays the engine for the new stamps has not been shipped, but it is expected to be forwarded within a month.—Assays. A list of assays made from middle January to end of March is enclosed herewith.

WELDER-HERCULES.—The directors have the pleasure to inform you that under date of April 4, Mr. William Palmer, the mines manager, reports as follows:—Main shaft, or No. 1. Since my last report this has been sunk about 5½ feet per week, or 22 feet for the month, making it to a total depth of 74 feet. The reef, as advised, is becoming larger, and is over 6 feet now of very promising looking quartz. I intend to continue this shaft to 100 feet, and am getting timber from the coast to slab it properly. (Cable advices of later date report shaft having reached a depth of 100 feet, reef still improving.)—Shaft No. 2. This is being sunk about 150 feet from No. 1 shaft, and is now down 70 feet. I am going to continue this shaft to 100 feet also, and timber it, then drive from one shaft to the other on the course of the lode, and so have a nice block of ore opened out and ready for stoping.—Open cutting. This I commenced on the surface between shafts No. 1 and 2, and found some fairly first-class stone here. I broke out sample of 10 lbs. weight, and dollied it, getting 1½ ounce of gold out of this quantity, and thinking it of such importance I cabled you the fact. I have about 10 tons of good stone at grass, but have stopped working it as it is very costly, and there is a beautiful reef going down, and looking very well. This will be in the block exposed and opened up when shafts 1 and 2 are connected, and judging by the appearance of the reef in the shafts and in the open cutting, this should be a fine block of stone. Shaft No. 661 (south of shaft No. 1 on line of reef). There is a great mass of quartz here and I have opened out on it and am very pleased with the appearance and prospects of the stone which are so promising, that I am commencing a shaft to prove the ore body. (In a subsequent cable, which was submitted to the shareholders, Mr. Palmer stated that he had struck an important body of ore in lease 661, and that the prospects were grand.) In conclusion, I may say that the more I see of your property I am convinced it is of great value, and am very sanguine of future success. As previously advised, the directors instructed the mine manager to forward a sample of ore taken from the stone at bank, and 5 cwt. of this material has been received in London. The stone was pulverised and well mixed, and a portion (1 cwt. 0 quarters 2 lbs.) was submitted to Messrs. Johnson, Matthey and Co., and their report is annexed:—We have assayed the sample of mineral as under, and find the following to be the result:—Weight of sample, 1 cwt. 0 qrs. 26 lbs.; Produce of gold, 16 dwts. 12 grains; produce of gold amenable to amalgamation, 4 ounces 12 dwts. 18 grains per ton of 2240 lbs. of mineral. In addition to the above, Messrs. Johnson, Matthey and Co., assayed 183.7 grains of gold alloy out of 4800 grains of mineral, this being the residue left after pulverising and sifting the stone, of quartz. This is equivalent to over 1½ ounce to the ton, and therefore the total produce of gold of the stone sent here would amount to 7 ounces 6 dwts. 12 grains. In view of these satisfactory results, and of the favourable reports received from the mines manager, the development of the property, as well as the certainty of an abundant water supply, the directors think that no time should be lost in preparing for crushing, and to this end have ordered a 20 head stamp battery, with all necessary plant, the order for supplying motive power, and the winding plant, are being sent on their way to the mine. There is already at bank a large quantity of ore, in addition to the large bodies of ore in sight, and available for stoping.

PROVINCIAL SHARE MARKETS.

THE CORNISH MINE SHARE MARKET.

Mr. MICHAEL WILLIAMS BAWDEN, Mining and Assaying Offices, Liskeard, Cornwall, writes (May 28):—The mining market has presented the usual quietude during the holidays, with almost a cessation of business. Prices mostly nominal, with the exception of Killifreth, which advanced 5s. on buying competition for rival scheme of Limited Liability company. Quotations:—Basset Mines, 18s. 6d. to 20s.; ditto (5s. paid), 4s. to 6s.; Blue Hills, 1s. to 1s. 6d.; Carn Brea, 9s. to 10s.; Devon Consols, 17s. to 18s. 6d.; Dolcoath 15s. to 16s.; ditto (7s. 6d. paid), 5s. to 6s.; East Pool, 2½ to 2½; Killifreth, 11s. to 12s. 6d.; Levant, 4 to 4½; Polberro, 7s. to 8s. c.p.; Tincroft, 9s. to 10s.; West Kitty, 2 to 2½; Wheal Grenville, 6 to 6½; Wheal Kitty, 3s. 6d. to 4s.; Wheal Metal, 3s. to 3s. 6d.

Messrs. ABBOTT and WICKETT, Stock and Share Brokers and Mining Share Dealers, Redruth, write under date of May 28:—Business is still very limited in Cornish mines, and prices are largely nominal, and at present dealers are unwilling to operate. East Pool and Wheal Agar engines are working, and it is to be hoped that matters will be arranged speedily. Dolcoath are about 15s. Quotations:—Blue Hills, 1s. to 2s.; Basset Mines, ½ to 1; Carn Brea, ½ to ½; Dolcoath (fully paid), 14s. 6d. to 15s. 6d.; ditto (7s. 6d. paid), 5s. to 6s.; East Pool, 2½ to 2½; Killifreth, 11s. 6d. to 12s. 6d.; Polberro, ½ to ½; South Crofty, ½ to ½; Tincroft, ½ to ½; West Kitty, 2 to 2½; Wheal Grenville, 5½ to 6; Wheal Kitty, 1s. 6d. to 2s. 6d.; Wheal Metal (3s. paid), 3s. 6d. to 4s.

MANCHESTER.

Messrs. JOSEPH R. and W. P. BAINES, Stock and Share Brokers, Queen's Chambers, 7, Market street, write May 28 (noon):—Beyond the fact the fortnightly settlement has fallen into this week, the present White-tide is much like its predecessors for years past. All who can are holiday-making, and what is doing here is simply the requirements of the settlement. Under these circumstances, movements are controlled entirely by other markets, and, therefore, call for no details from here. Home rails, for the most part, are better, Sheffield A having latterly had a smart advance. Americans tend easier still, notwithstanding that during the closed days of Saturday and Monday here, New York put prices better for their own dealings. Not much change in mines, but prices, at time of writing, are rather easier. In miscellaneous, Coats have had another sharp advance. They have lost some of it, however, up to now. Business closes here at 1 p.m. to-day, so we cannot report later.

SCOTCH MINING AND INDUSTRIAL COMPANIES SHARE MARKETS.

STIRLING.—Mr. J. GRANT MACLEAN, Stockbroker and Ironbroker (May 28), writes:—During the past week the markets have been quiet, owing to the intervening Whitsuntide holidays and fortnightly settlement. The rates of continuation to new account, June 12, have been light. Prices are inclined to improve on favourable trade prospects and the upward tendency in the metal markets.

In shares of coal, iron, and steel companies the principal movements have been in Steel Company of Scotland shares, which improved to 6½, as the company is understood to be very busy. Niddrie and Benhar recommends a dividend of 3s. 6d. per share, as against 4s. last year. Marbella are at 39s.

In shares of copper concerns a considerable amount of business has been done, and prices have advanced. The Cape Company announces a dividend of 2s., comparing with 1s. 3d. at this time last year. Arizona have improved to 62s. 6d., Mount Lyell 7½, Central Chilli 12s. 6d., Tinto 22½, and Tharsis 5½.

In shares of gold and silver mines a large amount of business has been done in Indians and West Australian descriptions. Mysore, on striking a rich reef, touched 83-16; Champion Reef 8½, Nandydroog 80s., Ooregums 80s., Nine Reefs 6s., and Kempinkote 1s. 9d. In West Australians the principal rise has been in North Boulder, on statement that ore has been cut giving 24 ounces per ton. A considerable business has been done in Brownhill Proprietary. Shares are about 21s. 3d., and considered likely to go higher. Kaffir shares are quite neglected. Chartered have only varied from 61s. 3d. to 65s., Consolidated from 11½ to 11½. East Rand and Randfontein show little alteration. African Recovery, 31s.; Associated W.A., 53s. 9d.; Big Blow, 10s.; Bonanza, 55s.; Bayley's No. 2 South, 13s.; Croesus South, 52s. 6d.; Emma, 2s. 3d.; Gold Coast Development, 3s. 9d.; Gold Estates of Australia, 54s. 6d.; Golconda, 14s. 6d.; Gem of Cue, 2s. 9d.; Gwelo, 2s.; Ginsberg, 98s. 9d.; Hainault, 39s.; Hauraki, 16s.; Hit or Miss, 46s. 3d.; Hannan's Proprietary, 50s.; Hampton Plains, 5½; Kapanga, 16s. 6d.; Kanowna, 12s. 6d.; Kathleen, 4s.; Mainland Consols, 80s.; Mount Charlotte, 40s.; Marchion New Chem, 9s. 6d.; Monastery Diamond, 13s.; New Steyn Estate, 26s. 3d.; Noltzykop, 1s. 9d.; Orion, 30s.; Paddington Consols, 33s. 9d.; Pestarens, 8s. 3d.; Rhodesian (Limited), 20s. 6d.; Sam's Wealth of Nations, 6s.; Sherlaw's, 14s. 3d.; Town Properties W.A., 23s. 9d.; Umtali, 6d.; Wentworth, 20s. 3d.; West Australian Exploring, 87s. 6d.; West Australian Mining, 9s. 9d.; and Wealth of Nations, 35s.

In shares of miscellaneous companies there has been little business doing. In oil companies Broxburn are at 101-16; Pampherton, 7 13-16; Young's, 36s.; and Hermand, 2s. Cheshire Alkali Deferred are at 22s. 6d.; Lawe's Chemical, 6½; and Nobel's Dynamite Trust, 18½.

EDINBURGH.

Messrs. THOMAS MILLER and SONS, Stock and Share Brokers, 69, Hanover-street, Edinburgh, report as follows under date of May 28:—The markets have shown great strength in several departments. In Railways, Caledonian Deferred have risen from 63 3-16 to 63½, North British from 5½ to 52 9-16. Debenture and preference stocks continue to advance. Canadians have somewhat suddenly come into demand at considerably enhanced prices. In insurance shares, Alliance have advanced from 11 to 12, City of Glasgow Life from 11½ to 12, Edinburgh Life from 55 to 55½, Liverpool, London, and Globe from 54½ to 55½, Scottish Union and National A from 91s. 6d. to 92s., Standard Life from 54 to 55½. Caledonian have declined from 28½ to 28, North British and Mercantile from 38 to 37½. British Linen Bank stock has advanced from 418 to 421, Clydesdale, from 20½ to 21½, Union from 22 3-16 to 22 11-16. National has declined from 359 to 358½. A number of financial trust stocks have been wanted at higher prices. Steel Company shares have risen from 45-16 to 46, Arizona Copper from 59s. 3d. to 62s. 9d., Rio Tinto from 21½ to 22½, Tharsis from 109s. to 110s. 6d. A number of Indian mines have had large rises. In oil, Broxburn have risen from 10½ to 10 11-16, Pampherton from 7½ to 7 13-16, Young's from 33s. 9d. to 36s. Distillers have improved from 23 9-16 to 24. Swan Land and Cattle have declined from 18s. to 16s. Assets have gone from 47s. to 45s. Coats have advanced from 43 to 45½.

The books of the NEW CHUM GOLD MINES (LIMITED) will be closed from June 1 to June 13 inclusive, for the purpose of distributing the interim dividend.

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BY ORDER OF THE MORTGAGEES.

EAST KENT, in the neighbourhood of Dover.—A valuable FREEHOLD FARM OF 171 ACRES, with possession at Michaelmas next.

MESSRS. WORSFOLD and HAYWARD have received instructions from the Mortgagees, with power of Sale, TO SELL BY AUCTION, at the Wellesley Hall, Dover, on THURSDAY, 25th June, 1896, at Three o'clock in the Afternoon, in One Lot, the desirable FREEHOLD ESTATE, known as PINEHAM FARM, in the parishes of River and Whitfield, containing 171a. 1r. 13p. of first-class arable and pasture land, together with three cottages, stabling for 12 horses, waggon lodge, granary, barn, range of bullock lodges and piggeries.

The farm is at present in the occupation of Mrs. Collard, whose tenancy expires at Michaelmas.

The discovery of coal in the neighbourhood, and the mining operations already arranged for by a syndicate, are a guarantee that land in this locality possesses a mineral value far in excess of its agricultural value, which will amply repay a purchaser in the near future.

Particulars, with Plan and Conditions of Sale, may be obtained of Messrs. WORSFOLD and HAYWARD, Auctioneers, Surveyors, and Estate Agents, Market Square, Dover, and 80, Cannon Street, London, E.C.; or of Messrs. MEYER and SHEPPARD, Solicitors, Taunton.

AT A NOMINAL RESERVE.

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COMPACT FREEHOLD FARM in the parishes of Sibertswold and Nonington, close to Shepherdswell Station on the L. C. and D. Railway.

MESSRS. WORSFOLD and HAYWARD have received instructions TO SELL BY AUCTION, at the Wellesley Hall, Dover, on THURSDAY, 25th June, 1896, at Three o'clock in the Afternoon, in One Lot, the desirable FREEHOLD FARM, known as LONG LANE FARM, situate in the parishes of Sibertswold and Nonington, about half-a-mile from the Shepherdswell Station, on the L. C. and D. Railway, and 6 from Dover, containing 122a. 2r. 21p. of useful arable and pasture land, together with a farm house and homestead, comprising large barn, stable, bullock lodge, open lodges, piggeries, and fowl house.

The discovery of coal in the neighbourhood and the mining operations already arranged for by a syndicate are a guarantee that land in this locality possesses a mineral value far in excess of its agricultural value, and as this farm adjoins the main line of the L. C. and D. Railway, a siding could be made without any cost, thus offering to speculators a fine opportunity of investment.

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NOTE ON MR. HOWE'S RESEARCHES ON THE HARDENING OF STEEL.*

By F. OSMOND, Paris

(Concluded from page 659.)

I AM aware that Mr. Hadfield, during a recent discussion, produced two alloys, each containing respectively 3.50 per cent. of manganese, and 0.10 and 1.054 per cent. of carbon; the first could be filed easily, but the second not at all; hence Mr. Hadfield concluded that carbon alone imparts hardness to the alloy, and, consequently, that the advocates of allotropy are wrong. But I have two other steels, which also came from Mr. Hadfield's collections, which contain—

	Carbon.	Silicium.	Manganese.
No. 309	0.33 ..	0.88 ..	3.67
No. 311	1.00 ..	0.72 ..	3.76

If these two varieties of steel are allowed to cool slowly from the same initial temperature of about 1000°, the first, which contains 0.33 per cent. of carbon, will scratch glass, while the second, with 1.00 per cent. of carbon, can be easily filed, from which I might infer, by adopting Mr. Hadfield's reasoning, that carbon destroys hardness, but this conclusion I shall take good care to reject. If, however, 7 per cent. of manganese be exceeded, and 12 or 13 per cent. be reached, we are in presence of Mr. Hadfield's well-known metal, which is difficult to file, though it does not possess great mineralogical hardness, and is susceptible of considerable elongation without local contraction of sectional area, is non-magnetic, and does not exhibit any notable critical point during slow cooling.

Quenching has no further effect on this metal than to hinder the liquidation of the double carbide of iron and manganese, which forms a continuous network round certain grains of the steel which have not become hard.

Carbon Steels.—As I have already explained, I ought only to deal with those steels which have been hardened, and in order to avoid mixtures of martensite with the ferrite or cementite, it is desirable that the hardening should be effected as quickly as possible, care being taken to employ a degree of temperature which is sufficient to ensure the complete diffusion of the carbon.

Under these conditions it is known that mineralogical hardness increases with the carbon (in accordance with a law which is imperfectly understood), from the hardness presented by soft iron to that of orthoclase; the residual magnetism also increases, at first, proportionately with the carbon. These two variables appear to attain a maximum with a percentage of carbon, which has not been accurately fixed, but which is not far from 1 per cent. Under these conditions the heat of the transformations which are not suppressed by the quenching ought to be evolved (at least in the case of high carbon steels) at the ordinary temperature. Mr. H. Le Chatelier's researches on the variations of electric resistance produced by hardening have shown that this should be the case.†

As the carbon rises above about 1 per cent., a new constituent, recently described by me, appears, and this I have called "Austenite," as a souvenir of the great part taken by Professor Roberts-Austen in establishing the allotropic theory. The proportion of "Austenite" increases until the percentage of carbon reaches about 1.60 per cent., but the total amount of it present cannot exceed a certain maximum (in round numbers, 50 per cent. of the mass), and its amount remains limited by the formation of cementite. Its properties, as far as can be determined from its presence in a mixture, approach nearly to those of steel with 12-13 per cent. of manganese and to the steel with 25 per cent. of nickel.‡

Conclusion.—The accepted facts tend to establish the parallelism of the three series—that is, of nickel, manganese, and carbon steels.

In each series is to be found:—

1.—A group of steels which are soft magnetic, and are not polar-magnetic, or hardly so when the metal is in the form of short bars.

2.—A group of steels which are either absolutely or relatively hard are magnetic and polar-magnetic.

3.—A group (or the representative of a group) of steels which are difficult to work in the cold do not possess much mineralogical hardness, and are extensible and non-magnetic.

The metals of the first group have well-defined and perfect critical points, which occur above 400°; the bulk of the iron is in its normal state—the α state.

The metals of the third group do not possess a transformation point at all; the iron then is present in the form which is by definition the γ modification. In view of the point discovered by Dr. Ball, and confirmed by Mr. Curie, the question arises whether it may not ultimately be necessary to divide the γ modification into two. The existence of iron in an allotropic form in non-magnetic steels, although it may still be rejected by some metallurgists, has, nevertheless, been established with such a degree of precision and certainty as the demonstrations of chemical science allow.

As regards the second group, that of the hard and polar-magnetic steels, I attribute their characteristic properties to the maintenance of a part of the iron in the δ form, the transformation of δ into α iron being limited by the pressure which results from a change in volume, exactly as partial vocalisation limits the evaporation of water in a closed vessel. But it is true that the question still retains a certain amount of residual hypothesis.

Experiments show that in the case of metals of this group, the transformations take place below 350° or 400°; that is to say, below the temperature at which tempering obliterates in carbon steels the greater part of the effects of hardening.

The subsisting hypothesis consists in admitting that in these conditions the transformations of iron are incomplete, which seems very probable, for we cannot understand otherwise the break which appears to exist between the two first groups.

In order to prove this experimentally, it is necessary to measure (1) the quantities of heat normally evolved at points A_1 and A_2 , during the cooling of pure iron; (2) the quantity of heat actually evolved when the points A_1 and A_2 are united in a single point in steels which remain "glass-hard" during slow cooling; and (3) to show that the second is smaller than the sum of the two first—that is, of A_1 and A_2 , separately. But this comparison, which seems easy in theory, becomes much less easy in practice, for two reasons:—(1) No exact method is known for converting into calories the evolutions of heat represented by the delays observed during cooling; (2) even if there were such a method of procedure, it would still be necessary to know how the heat of the transformations varies with the temperature at which the transformations are produced. Recourse can only be had, therefore, to direct examination of the curves, and this examination is necessarily insufficient. In fact, whilst

admitting that the transformation of δ into α may be incomplete, this transformation can only be partial (since glass-hard steels are magnetic, and their being magnetic involves the supposition that α iron is present), and further, the transformations occur in the metals in question at the point A_2 . The portion of A_2 , which is supposed to be suppressed, can only then be a small portion of the heat really evolved, which includes and represents the total transformation of γ into δ and the partial transformation of δ into α . Inspection of the curves does not show a difference of this kind, and, in fact, does not really indicate it.

I regret I am not able to furnish more complete documentary evidence. I think, however, that the facts are already capable of being grouped in a satisfactory way, and that the distinction established between γ and δ iron, which is not an arbitrary but an experimental one, will cause the difficulties to disappear, which, at the outset, left a certain amount of confusion subsisting between the two varieties. This grouping of facts also removes the difficulties which were ushered in by the more complete knowledge of manganese steels and by the discovery of nickel steels.

Mr. Howe's memoir does not, moreover, permit us to delay the exposition of these ideas. If the explanation now offered seems premature, it will at least furnish a programme of fresh researches which I cannot hope to complete unaided. However, do the explanations given show that there is room for the introduction of a carbo-allotropic theory such as Mr. Howe has sketched? I do not hesitate to reply in the affirmative, in the sense that carbon presents, in its relations with iron, a certain number of peculiarities which are inseparable from its presence. It is necessary, however, strictly speaking, to contemplate a theory for each of the bodies which we have considered which would point to nickel-allotropic and manganese-allotropic theories.

The allotropic theory, as I hope I have already shown, enables the dominant facts and general history of steels to be synthesised, but it must differentiate itself effectively in connection with special facts.

Furthermore, I ask Mr. Howe to permit me to welcome the carbo-allotropic theory, whatever its future development may be, not as a rival theory, but as a friend and ally.

THE DOVER COAL FIELD.—An alteration has been made with reference to the site on which the proposed shafts near Dover are to be sunk. Hougham, between Folkestone and Dover, has for the present been abandoned, arrangements having been made for continuing the shaft commenced by Sir Edward Watkin on the fore-shore, near Shakespeare's Cliff. This shaft is 18 feet wide, and has already been sunk to a depth of 80 feet. A second shaft was stamped out on Saturday at a distance of 60 feet from the first.—*The Colliery Guardian.*

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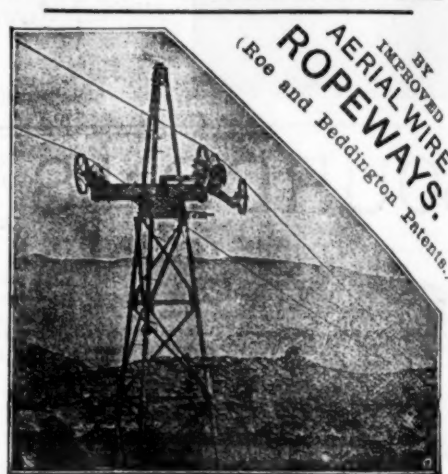
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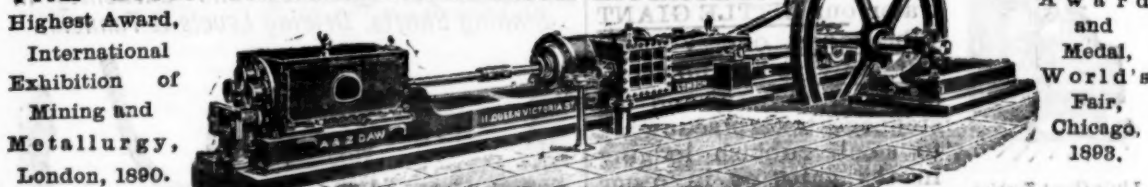
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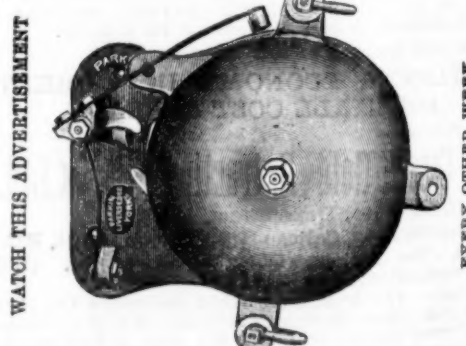
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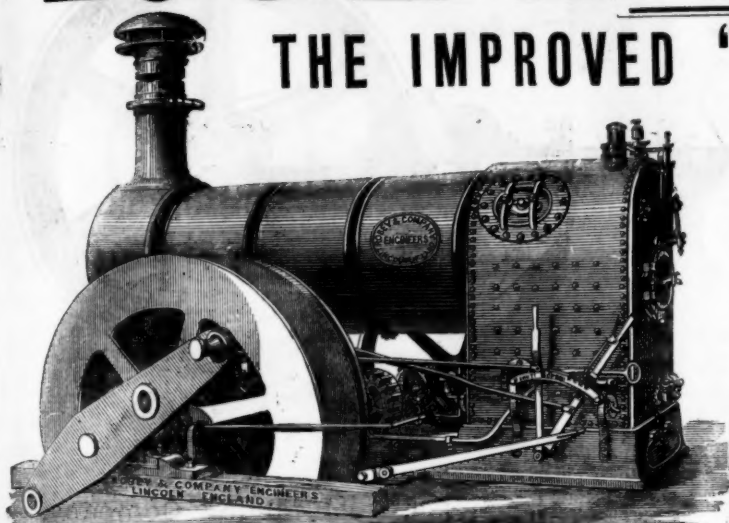
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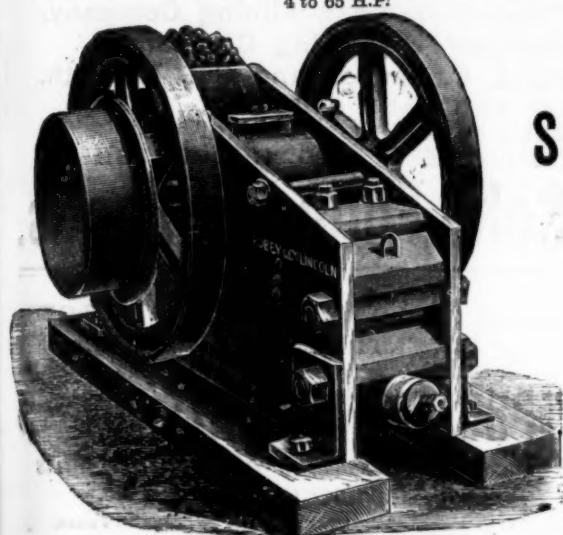


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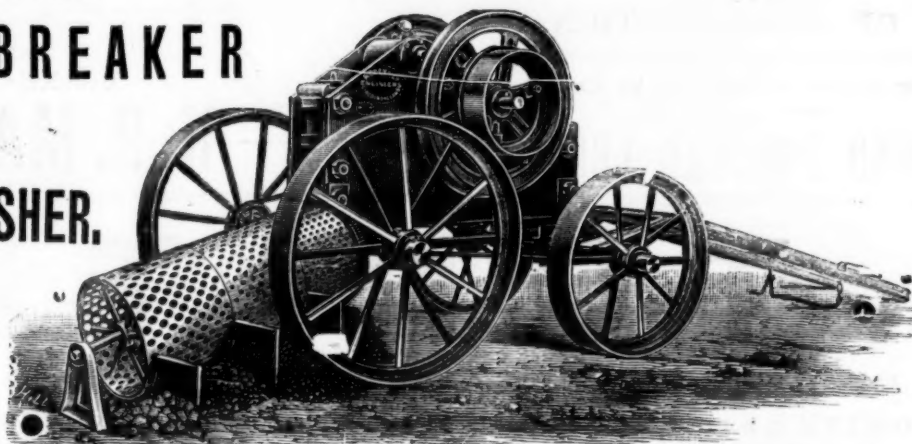
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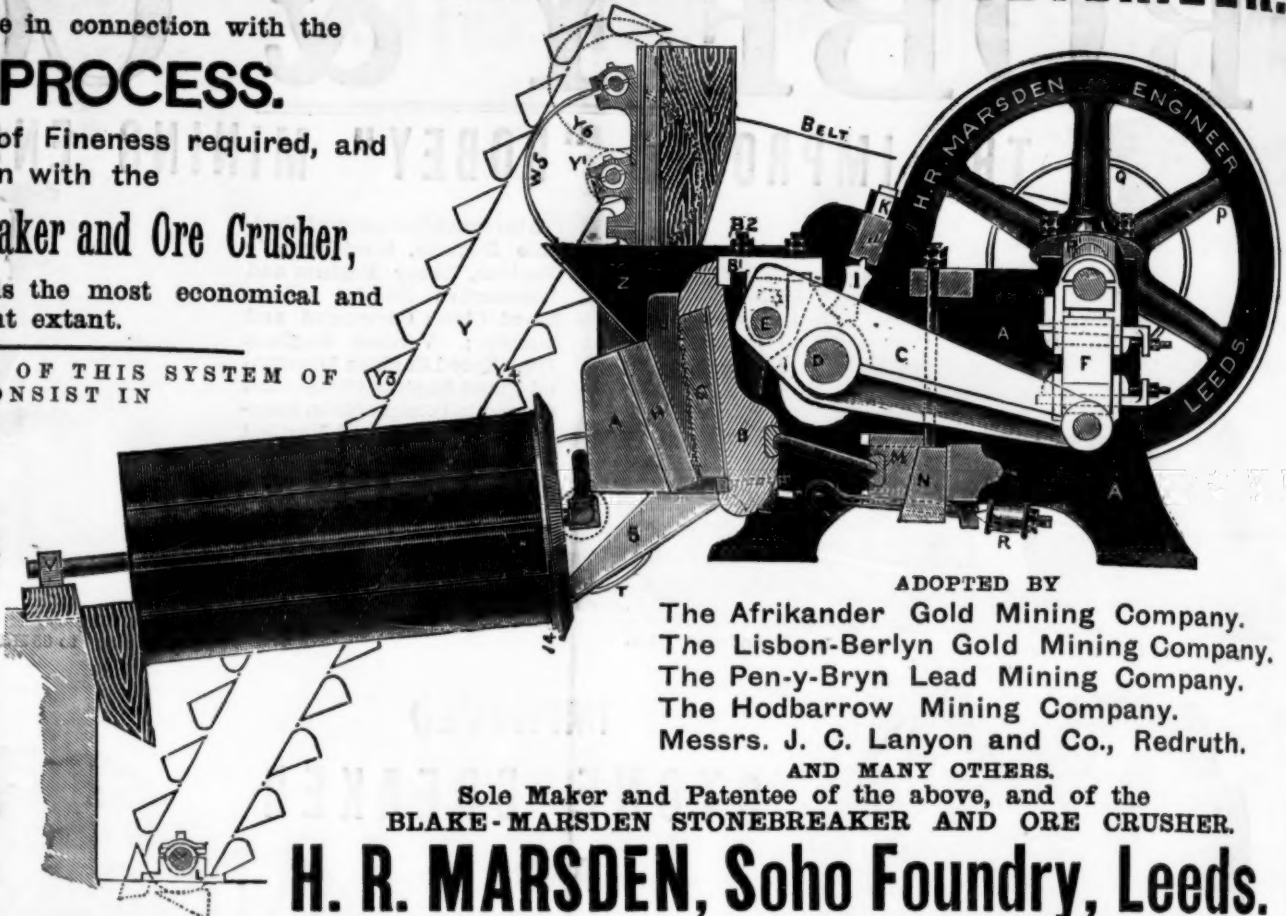
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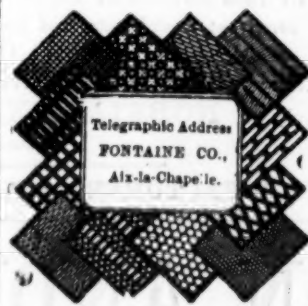
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